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SEARCH REQUEST FORM

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Requester's Full Name: Shefali Patel Examiner #: 79747 Date: 1/29/03
Art Unit: 2621 Phone Number 306-4182 Serial Number: 09/498963
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Title of Invention: three-dimensional Position & Orientation Sensing System

Inventors (please provide full names): Akio Kosaka et al., Akito Saito, Takao Asano Hiroshi Matsuzaki, Yukihito Furuhashi, Takao Shibasaki

Earliest Priority Filing Date: 2/4/99 (Japan)

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Please search for these elements... claims are attached.

1. regarding to claim 1, lines 14 - 20.
2. Regards to claim 2, lines 9 - 21.
3. Regards to claim 4, lines 18 - 24.
4. Regards to claim 5, lines 5-6 & lines 9 - 15.

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PTO-1590 (8-01)

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Augmented Realit y System for Surgical Navigation Using Robust Target Vision

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Abstract

This paper presents a robust and accurate vision-based augmented reality system for surgical navigation. The key point of our system is a robust and real-time monocular vision algorithm to estimate the 3D pose of surgical tools, utilizing specially designed code markers and Kalman filter-based position updating. The vision system is not impaired by occlusion and rapid change of illumination. The augmented reality system superimposes the 3D object wireframe onto the live viewing image taken from the surgical microscope as well as displaying other useful navigation information, while allowing the surgeons to freely change its zoom and focus for viewing. The experimental results verified the robustness and usefulness of the system, and acquired the image registration error less than 2 mm.

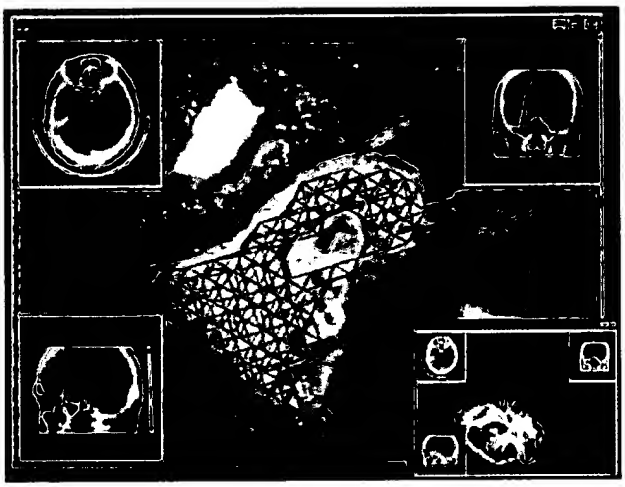


Figure 1: *Navigation window for surgical navigation. In the main window, the target object is represented by a purple wireframe which is superimposed in real-time onto the live image taken by the surgical microscope. The resolution of the wireframe is 1 mm.*

1 Introduction

Surgical navigation has been playing an important role in the medical fields, providing surgeons with useful 3D navigation information such as the direction and distance from the current tool position to the target objects well as those shapes, volumes and geometric relationships [3, 9]. Augmented reality techniques contribute to such surgical navigation as an efficient and effective visual aid for surgeons by superimposing rich CAD-based representations of target objects as well as relative positions to surgical tools and objects onto live viewing images from surgical microscopes and endoscopes.

In order for the readers to get the sense of the surgical navigation, in Fig. 1, we show a typical navigation window of our system which displays the shape and volumetric representations of the 3D target object in real-time during the surgery. In this figure, the wireframe of the 3D target tumor is superimposed on to the live viewing image taken by the microscope so that the surgeon can visually acquire the information about where the target object should be with respect to the current position of the surgical tools. At each corner of the window, an additional subwindow is displayed, three of them showing the locations of the view direction and focal point of the microscope from the three perpendicular axes onto the CT slices of the patient brain.

Such systems require a fast, accurate and robust pose estimation of the surgical microscope and other tools with respect to the target objects as well as an accurate registration of the actual objects with the 3D model of the objects.

Traditionally in the medical fields, non-contact optical sensors are most popular to estimate the pose of the surgical tools such as surgical microscopes and en-

doscopes [5]. In such systems, multiple infrared diodes are mounted on the side of the surgical microscopes, and a stereo vision system with multiple infrared receivers estimates the 3D position of the infrared diodes using the triangulation. Unfortunately, the stereo vision system requires a large space for measurement and placement in the operation room. In most cases, the estimation accuracy is not satisfactory due to the large physical distance from the microscope to the stereo vision system.

As for the industrial augmented reality systems, vision-based trackers are frequently used for pose estimation [1, 8]. In such systems, the trackers either analyze the image streams to recognize special markers pre-registered in the environment [8], or track non-registered natural markers over the image streams.

In the former approach, in order to attain the high speed processing required for augmentation, most researchers use color markers, since they can be easily recognized in controlled environments. We have learned, however, that such color markers are highly sensitive to different illumination conditions, and are difficult to use in surgical operation rooms. In the latter approach, most of the motion tracking algorithms fail in the presence of occlusion and rapid change of illumination.

In this paper, we are attempting to solve such problems by a newly developed robust monocular vision system as well as specially designed code markers. In our system, the code markers are attached to the target object surface or are placed in the neighborhood of the objects in advance. The robust vision module quickly identifies the code markers using an efficient region-based extraction algorithm. The Kalman filter then updates the 3D pose of the the camera with respect to the 3D target objects.

Our target vision module is applied to the pose estimation of the surgical microscope for augmented reality-based navigation. The navigation functions are not impaired by occlusion and rapid change of illumination. The average error of 2 *mm* is observed for the registration between the 3D object model and the actual video streams obtained from the microscope, while the system is allowing the users to freely change zoom and focus parameters.

In the rest of this paper, we will first present the overall architecture of our augmented reality system. We will then discuss the robust target vision module used for the pose estimation, and will next present the details of the augmented reality-based surgical navigation system. Finally, experimental results will be presented to verify the robustness and usefulness of our system.

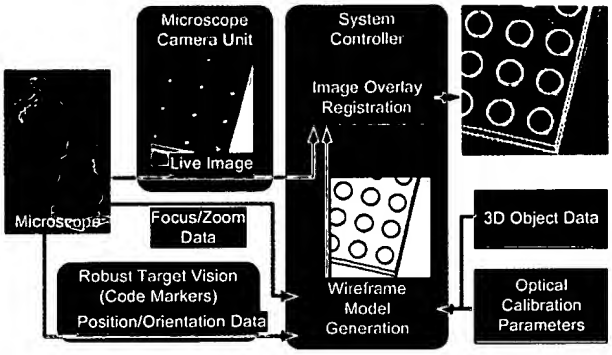


Figure 2: *System configuration.*

2 Overall Architecture for Surgical Navigation

Fig. 2 shows the overall architecture of our vision-guided navigation system for surgery. The system consists of the surgical microscope, the microscope camera unit, the robust target vision module, and the system controller.

A live video image of a target object is captured in the microscope camera unit equipped in the surgical microscope whose viewing zoom and focus are controlled manually by a user. The robust target vision module estimates the 3D pose of the microscope with respect to the 3D target object by recognizing the code markers located around the object. The system controller, which has stored the 3D wireframe of the object in advance, receives the current 3D pose of the microscope from the robust target vision module, and also receives the current viewing zoom and focus parameters from the microscope. The system controller then renders the wireframe of the 3D object based on the 3D pose and zoom/focus parameters, and superimposes the rendered wireframe image onto the live image provided by the microscope camera unit.

As shown in Fig. 3, attached to the target object is a set of code markers whose positions with respect to the target object are calibrated prior to the surgical operation. The robust target vision module includes a single CCD camera (a wide-view vision sensor) mounted on the surgical microscope, and estimates the 3D pose of the surgical microscope with respect to the target object. Note that the camera axis is almost parallel to the optic axis of the microscope so that the registration error associated the orientation can be minimized by the monocular vision camera.

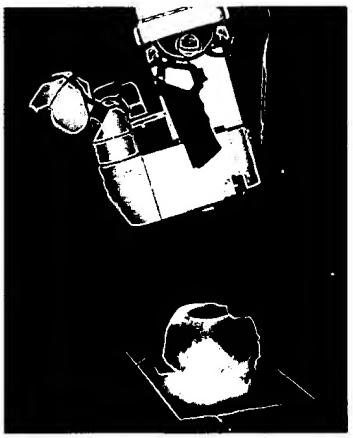


Figure 3: *A small CCD camera for the target vision module is mounted on the microscope (right side). The camera axis is almost parallel to the optic axis of the microscope so that the registration error associated with orientation can be minimized by the monocular vision camera. The vision module recognizes the code markers located on a plate which is attached to the object of interest. As shown in this figure, the microscope emits powerful light. Most of the previous approaches for marker recognition algorithms may fail in such severe lighting conditions.*

3 Robust Target Vision Algorithm

The key factor of our augmented reality system is a newly developed vision module suitable for the pose estimation of the surgical tool with respect to the target object by using the visual observation through the camera.

3.1 Code markers

In our system, we design new markers called *code markers* as shown in Fig. 4. In our current implementation, the code markers consist of an enclosing large circular disk (diameter 20 *mm*) and five small circular patterns (diameter 3 *mm*) inside the large circle. The combinations of small circle patterns provide at most 12 different codes of 0, 1, ..., 11, by changing their black/white gray levels. The rationale for designing the code markers is as follows:

1. Regardless of the view orientation, the image projections of the circular markers can be approximated by ellipses. So the extraction of the circular markers are much easier than markers of other shapes.

2. Once we obtain the elliptic marker regions, it is easy to identify the codes inside, since the ellipse image region can be easily rectified to regular circles by utilizing its moments of inertia.

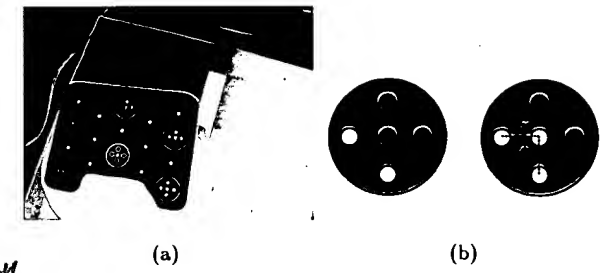


Figure 4: *(a) Code markers are attached to a plate which specifies the code marker coordinate frame F. Five small patterns indicate the code for each marker. (b) Examples of code markers. 12 different codes can be designed for this specific implementation. The center pattern represents the position of the code markers. Other four are located with the same distance d and the same angle 90 degrees.*

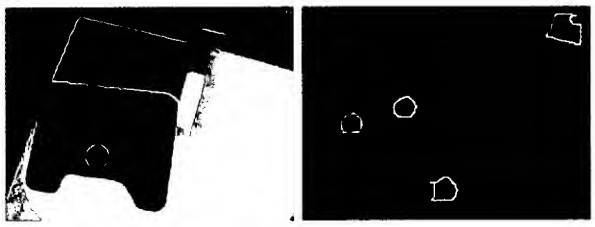
As we will explain the details in the next section, these code markers are attached either to the object surface or in the neighborhood of the object. Fig. 4 (a) shows an example that the code markers are located on the plate which occupies the code marker coordinate frame. Such a plate will be attached to the object so that registrations of the two coordinate frames can be easily attained. In this case, the 3D positions code markers with respect to the object are measured by calibration prior to the actual surgery.

So the task of the target vision module is transformed into the estimation problem of the 3D camera pose with respect to the code marker plate which is attached to the object.

3.2 Code marker recognition algorithm

The vision module fixedly mounted on the surgical microscope identifies code markers using a specially designed vision algorithm. The vision algorithm consists of *Candidate Region Extraction Module*, *Marker Identification Module*, and *Pose Estimation Module*.

The original camera image is first given to *Candidate Region Extraction Module*. This module performs a coarse-to-fine strategy-based region segmentation to extract circular regions which potentially correspond to the large circular disk of code markers. In the coarser processing stage, the module first generates a coarse image of size one sixteenth, and applies the median filter to remove all textural components within the regions – the small code patterns can be all removed by



(a) (b)

Figure 5: *(a) Result of the median filtering in the coarse image analysis. (b) Result of spedge-and-medge region segmentation. Different segmented regions are labeled in different colors.*

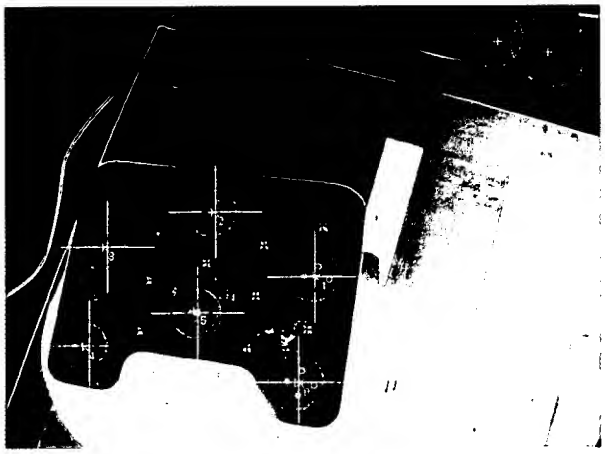


Figure 6: *Result of code marker region extraction and pose estimation. White dotted ellipses indicate candidate ellipse regions.*

this filter. The module then applies the region-based segmentation algorithm called *spedge-and-medge* developed by Rahardja and Kosaka [7]. As well described in [7], this segmentation algorithm quickly extracts ellipse regions that are potentially matched to the code markers, and characterizes the regions by ellipse attribute values. Such ellipse attributes are 1) centroid, 2) area, 3) orientation, 4) moment of inertia, 5) mean and standard deviation of gray values.

Figs. 5 and 6 show the result of the code marker extraction. In Fig. 5 (a), the result of the median filtering is shown. Fig. 5 (b) shows the result of *spedge-and-medge* region segmentation algorithm. In this figure, different segmented regions are labeled in different colors. The candidate ellipse regions are shown as dotted ellipses in Fig. 6.

*Marker Identification Module*then receives information about each marker candidate region, and analyzes the candidate region by expanding the region into the original image size in the finer stage. For each candidate region extracted, the algorithm first extracts the code patterns within the vicinity of its candidate region by taking into account the mean g_{mean} and the standard deviation g_{std} of gray values. Namely the algorithm applies high and low thresholds to extract small code pattern subregions within the candidate marker region.

Once the algorithm obtains the small subregions, the algorithm verifies whether or not the small subregions form the code patterns in terms of geometric constraints. Fig. 4 (b) shows the geometric constraints to be considered. More specifically, first rectifying the ellipse region to the regular circle by using the moments of inertia of the ellipse, the module examines whether or not the positions of the center pattern and the remaining four small patterns satisfy the geometric constraints of distance d and angle 90 *degrees*. If the code patterns are verified, then this module reports the result to the *Pose Estimation Module*. Note here that we require at least four code markers be identified in order to estimate the 3D pose, as shown in the next subsection.

3.3 Pose estimation

Pose Estimation Module receives the region attributes associated with code marker regions. *Pose Estimation Module* then estimates the 3D pose of the camera with respect to the code marker frame in the following manner: Let ${}_S R_F = (r_{kj})_{k,j=1,2,3}$ be the rotation matrix from the code marker frame$F$ to the sensor frame S (camera frame), and let ${}_S T_F = [t_x, t_y, t_z]^T$ be the translation vector from the code marker frame F to the sensor frame S. The point coordinates (x_i^F, y_i^F, z_i^F) in the code marker frame F are represented by the point coordinates (x_i^S, y_i^S, z_i^S) in the sensor frame S as

$$\begin{bmatrix} x_i^S \\ y_i^S \\ z_i^S \end{bmatrix} = {}_S R_F \begin{bmatrix} x_i^F \\ y_i^F \\ z_i^F \end{bmatrix} + {}_S T_F. \qquad (1)$$

If we use the homogeneous transformation matrix ${}_S H_F$, then this matrix is expressed by

$${}_S H_F = \begin{bmatrix} {}_S R_F & {}_S T_F \\ 0 & 1 \end{bmatrix}. \qquad (2)$$

The pose estimation problem is, therefore, to determine the transformation parameter ${}_S H_F = ({}_S R_F, {}_S T_F)$.

Step 1: Compensation of lens distortion

Since we use an 8 mm lens and a 1/3 inch small CCD camera for the target vision module, the lens distortion must be compensated in order to attain the accurate pose estimation. We use Weng's algorithm to remove the lens distortion [10]. Once the lens distortion is removed, the camera characteristics are approximated by a pin-hole camera model. Let (u_i, v_i) be the normalized camera image position of the center code pattern of the i^{th} code marker (x_i^F, y_i^F, z_i^F) in the sensor coordinate frame F. Then we can formulate

$$u_i = \frac{r_{11}x_i^F + r_{12}y_i^F + r_{13}z_i^F + t_x}{r_{31}x_i^F + r_{32}y_i^F + r_{33}z_i^F + t_z} \quad (3)$$

$$v_i = \frac{r_{21}x_i^F + r_{22}y_i^F + r_{23}z_i^F + t_y}{r_{31}x_i^F + r_{32}y_i^F + r_{33}z_i^F + t_z}.$$

Step 2: Generating pose hypotheses by correspondences

From Step 1, we obtain the set of 3D-2D point correspondences of the code markers in the camera image and the code marker frame, namely (x_i^F, y_i^F, z_i^F) and (u_i, v_i). Our next task is to estimate the transformation from the code marker frame F to the sensor frame S. Now we need to estimate the transformation ${}_SR_F$ and ${}_ST_F$. Fischler and Bolles proposed the algorithm to solve this problem [2]. This algorithm first selects three representative-point correspondences to generate four possible solutions of ${}_SR_F$ and ${}_ST_F$, and then uses other point correspondences to verify each solution. We modify their algorithm into an optimization problem in order to make the system more robust in the following way:

Let us assume that we have obtained three-point correspondence which satisfies Eq. (3) for i = 1, 2, 3. As shown in Fig. 7, we define unknown variables d_i, the 3D distance from the camera origin O_S to the code marker F_i, and the known angles θ_{ij} between lines $\overline{O_SF_i}$ and $\overline{O_SF_j}$, and the known 3D distance R_{ij} between code markers F_i and F_j. Then θ_{ij} and R_{ij} are computed by

$$cos\theta_{ij} = \frac{u_iu_j + v_iv_j + 1}{\sqrt{u_i^2 + v_i^2 + 1}\sqrt{u_j^2 + v_j^2 + 1}} \quad (4)$$

$$R_{ij} = \sqrt{(x_i^F - x_j^F)^2 + (y_i^F - y_j^F)^2 + (z_i^F - z_j^F)^2} \quad (5)$$

and unknown d_i and d_j are constrained by the following three equations of $(i, j) = (1, 2), (2, 3), (3, 1)$:

$$R_{ij}^2 = d_i^2 + d_j^2 - 2d_id_jcos\theta_{ij}. \quad (6)$$

These equations provides four possible solutions associated with unknown d_i's. In this module, we keep all four solutions associated with d_i's. Further search for the optimal solution among four solutions will be done in Step 3.

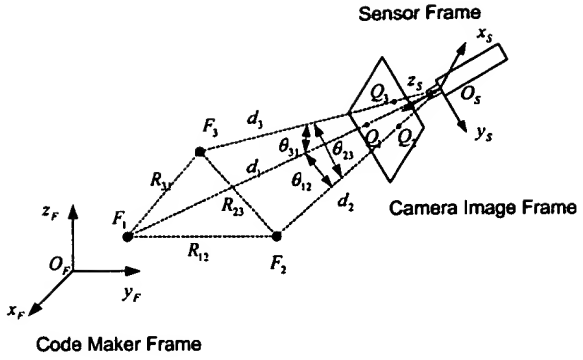


Figure 7: *Four distinct pose hypotheses are generated from 3D-2D correspondences of code markers.*

Assume, for a moment, that $(\tilde{d}_1, \tilde{d}_2, \tilde{d}_3)$ is a solution to these equations. Let

$$D_i = \sqrt{u_i^2 + v_i^2 + 1}. \quad (7)$$

Then the 3D coordinates of the code markers in the sensor coordinate frame are given by

$$x_i^S = \frac{\tilde{d}_i}{D_i}u_i \quad y_i^S = \frac{\tilde{d}_i}{D_i}v_i \quad z_i^S = \frac{\tilde{d}_i}{D_i}. \quad (8)$$

Now we have the 3D-3D point correspondence between code marker frame and the sensor frame, namely (x_i^F, y_i^F, z_i^F) and (x_i^S, y_i^S, z_i^S). Then we formulate the relationship in terms of rotation matrix ${}_SR_F$ and translation vector ${}_ST_F$ by Eq. (1). A method for obtaining ${}_SR_F$ and ${}_ST_F$ is well known. For example, Horn [4] introduced a method using the quaternion. At the end of Step 2, we now obtain four possible hypotheses for the 3D pose of the camera. Let $({}_SR_F(k), {}_ST_F(k))$ (k=1, 2, 3, 4) be such four solutions.

Step 3: Search for optimal pose by Kalman filter

In this step, the algorithm looks for an optimal solution among the four possible solutions obtained in Step 3. As we have mentioned, the pose hypotheses are generated by 3D-2D correspondences of three code markers. In Step 4 we utilize correspondences of the remaining code markers. Let F_j (j=4, 5, ..., m; $m > 3$) be the remaining code markers. For each pose hypothesis $({}_SR_F(k), {}_ST_F(k))$, Then we sequentially update $({}_SR_F(k), {}_ST_F(k))$ by the constraint equations Eq. (3) between the 3D-2D point correspondence (u_j, v_j) and (x_j^F, y_j^F, z_j^F) using the extended Kalman filter. Due to

the page limit of this paper, we will not describe the details of this method. The readers who are interested should look at the paper by Kosaka and Nakazawa [6]. Let $({}_S\tilde{R}_F(k), {}_S\tilde{T}_F(k))$ be the updated 3D pose for $({}_SR_F(k), {}_ST_F(k))$. Then we compute the sum of the squared distance between the measurement points and updated points in the image as:

$$dist(k) = \frac{1}{m}\sum_{i=1}^{m}\left((u_i - \tilde{u}_i)^2 + (v_i - \tilde{v}_i)^2\right) \quad (9)$$

where $(\tilde{u}_i, \tilde{v}_i)$ is computed from Eq. (3) by substituting the pose parameters $({}_SR_F, {}_ST_F)$ by updated parameters $({}_S\tilde{R}_F(k), {}_S\tilde{T}_F(k))$.

Since this distance represents the fitness of the model and image measuremen ts for code markers, we select the optimal solution which minimizes the distance $dist(k)$.

Fig. 6 shows the result of pose estimation using the extended Kalman filter and the optimal solution search. In this figure, the positions of the code markers are reprojected onto the original image frame (large cross). Therefore, this figure demonstrates the accuracy of our algorithm. We note here that in our algorithm the average error of reprojection in the image is approximately 0.3 *pixel* when six code markers are used for pose estimation. Note that the reliable distance range of the target vision module is between 100 *mm* and 500 *mm*.

4 Augmen ted Reality System for Surgical Na vigation

So far we have discussed the details of the robust vision module for pose estimation. We now describe the augmented reality system using this vision module. The augmentation system continuously superimposes the object wireframe onto the microscope live image, by accurately calibrating and registering all the coordinate frames necessary for the system.

4.1 System coordinate frames

We first define various coordinate frames necessary for augmentation of the 3D object wireframe to the live image of the microscope. Fig. 8 shows the coordinate frames used for the augmen ted reality system.

- Sensor frame S: coordinate frame specified by the robust target vision module.
- Microscope reference frame M: coordinate frame associated with the microscope.
- Microscope viewing frame MC: coordinate frame associated with the microscope viewing camera unit inside the microscope.

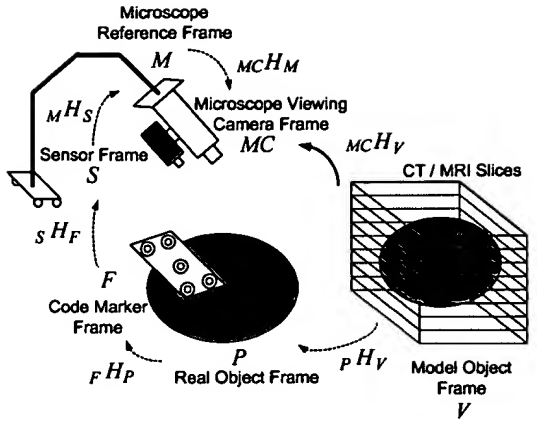


Figure 8: *Various coordinate frames used for the augmented reality system.*

- Model object frame V: 3D object model frame in which the 3D object wireframe is defined.
- Real object frame P: coordinate frame associated with the actual object such as the patient itself.
- Code marker frame F: coordinate frame specified by the code marker plate.

In order to attain the augmentation of the 3D object wireframe to the microscope live image, we need to determine the transformation ${}_{MC}H_V$ from the model object frame V to the microscope viewing frame MC as well as determine the optical characteristics of the microscope viewing frame controlled by viewing zoom and focus parameters.

The transformation ${}_{MC}H_V$ is decomposed by

$${}_{MC}H_V = {}_{MC}H_M\ {}_MH_S\ {}_SH_F\ {}_FH_P\ {}_PH_V \quad (10)$$

In this equation, the first term ${}_{MC}H_M$ varies when the zoom and focus are changed by the user. The second term ${}_MH_S$ is constant and can be calibrated in advance, since the robust target vision camera is fixed with the microscope. The third term ${}_SH_F$ should be measured during the surgery, based on the movement of the microscope, as described in Section 3. The fourth term ${}_FH_P$ is fixed and can be calibrated in advance, since the code marker plate is attached to the object. The fifth term ${}_PH_V$ is constant during the surgery, and can be calibrated in advance. In the next subsection, we will explain the method for estimating ${}_{MC}H_M$ under zoom and focus control.

4.2 Zoom/focus con trol of microscope

As we have discussed in the previous section, the user can freely control the zoom and focus parameters. In order to register the 3D object wireframe with

the live images taken by the microscope, we have to carefully calibrate the optical characteristics of the microscope. In this subsection, we will briefly describe a method for calibrating the optical characteristics of the microscope.

Through empirical examinations of the microscope, we have learned that the microscope optics can be modeled by the pin-hole camera model for which we use four intrinsic camera parameters α_u, α_v, u_0, v_0 and six extrinsic camera parameters ϕ_x, ϕ_y, ϕ_z, t_x, t_y, t_z. Of course, the extrinsic camera parameters form the homogeneous transformation ${}_{MC}H_M = ({}_{MC}R_M, {}_{MC}T_M)$ from the microscope reference frame M to the microscope viewing camera frame MC. More specifically, let (x^M, y^M, z^M) be the point in the microscope reference frame M and (x^{MC}, y^{MC}, z^{MC}) be the corresponding point in the microscope viewing camera frame MC. Then the image point (u, v) corresponding to (x^M, y^M, z^M) is computed by

$$\begin{bmatrix} uw \\ vw \\ w \end{bmatrix} = \begin{bmatrix} \alpha_u & 0 & u_0 & 0 \\ 0 & \alpha_v & v_0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix} \begin{bmatrix} x^{MC} \\ y^{MC} \\ z^{MC} \\ 1 \end{bmatrix}$$

$$= \begin{bmatrix} \alpha_u & 0 & u_0 & 0 \\ 0 & \alpha_v & v_0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix} \begin{bmatrix} {}_{MC}R_M & {}_{MC}T_M \\ 0 & 1 \end{bmatrix} \begin{bmatrix} x^M \\ y^M \\ z^M \\ 1 \end{bmatrix} \quad (11)$$

Fig. 9 shows these parameters. Let z_m be the zoom parameter and f_c be the focus parameter of the microscope. Then α_u, α_v, u_0, v_0, ϕ_x, ϕ_y, ϕ_z, t_x, t_y, t_z are all functions of z_m and f_c.

In actual implementation, we estimate the functional form of each parameter with respect to the two variables z_m and f_c, and generate a two-dimensional look-up table to interpolate the intermediate values. This look-up table is used to render the image wireframe in the microscope viewing camera frame.

4.3 3D modeling of objects and calibration between model object frame and real object frame

Object models for surgical navigation are generated from helical CT/MRI slice images. Before taking the CT/MRI slice images, special markers are attached to the patient body so that these markers can be automatically identified in the CT/MRI slice images and positions of the markers are measured in the 3D rendered images of the patient body. This technique greatly helps us calibrate the actual patient body with the 3D wireframe model generated from the CT/MRI.

From the CT/MRI slice images, we also extract 3D target regions such as the tumor and anatomical landmarks which are important for surgical navigation.

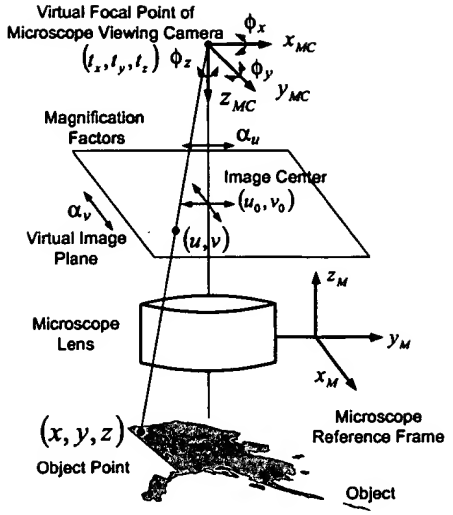


Figure 9: *Modeling of optical characteristics of the surgical microscope by a pin-hole camera. All of intrinsic and extrinsic camera parameters are functions of zoom and focus values.*

Such 3D models are represented by the 3D object wireframe as shown in Fig. 1.

4.4 System calibration

In prior to the surgery, the system calibrates transformation between various coordinate frames. Although we do not explain the details here, the system actually calibrates the transformation ${}_MH_S$ from the sensor frame S to the microscope M, the transformation ${}_PH_V$ from the 3D model object frame V to the real object frame P, the transformation ${}_FH_P$ from the real object frame P to the code marker frame F.

4.5 Live registration of 3D wireframe object model and microscope live images

In the live navigation mode, the system simultaneously computes the transformation ${}_{MC}H_V$ from the model object frame V to the microscope viewing frame MC as well as 3D object wireframe within the camera viewing frame using Eq. (11).

Fig. 10 shows the registered images for which zoom and focus are changed by the user. As shown in this figure, the system can superimpose the object wireframe in real-time with sufficient accuracy.

(a) (b)

Figure 10: *Registered images (a) the zoom is out, (b) the zoom is in. In both cases, the system can superimpose the object wireframe with sufficient accuracy. Note that the resolution of the wireframe is 1 mm.*

5 Experime ntal Results

We have tested this augmented reality system for various objects. One example is shown in Fig. 1. In this figure, we used a plastic model of a human brain. This plastic model was generated from the helical CT slices taken from an actual patient. The resolution of the wireframe in this figure is 1 *mm*. Typical registration error observed in the overlayed live images is less than 2 *mm*. The speed for superposition is approximately three frames per second. Note that the target vision module updates the measuremen t approximately five frames per second. Although our system still has room for modification, the surgeon's evaluations verify that the system performance is satisfactory and useful for surgical navigation.

6 Conclusions

W e developed a robust augmen ted reality system for surgical navigation. Our system is characterized by the robust target vision system module which enables us to update the surgical navigation approximately three frames per second with registration accuracy 2 *mm*. The target vision module utilizes the newly developed code markers and the extended Kalman filter that enhance the system performance. W e are currently preparing for actual clinical tests using this augmented reality system.

Ac knowledgments

W e thank Dr. Hiroshi Iseki at Tokyo Women's Medical University for his evaluation of our system. This work was supported in part by Information Technology Promotion Agency, Japan.

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File 344:Chinese Patents Abs Aug 1985-2002/Dec
         (c) 2003 European Patent Office
File 347:JAPIO Oct 1976-2002/Sep(Updated 030102)
         (c) 2003 JPO & JAPIO
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200307
         (c) 2003  Thomson Derwent
? ds

Set     Items   Description
S1    1524138   IMAGE? OR PICTURE? OR GRAPHIC? OR PHOTOS OR PHOTOGRAPH?? OR
              PHOTO
S2     126072   PIXEL? OR PEL OR PICTURE()ELEMENT? OR PICEL?? OR PIXCEL??
S3      29461   3D
S4     156723   (THREE OR THIRD OR 3)(3N)(DIMENSION? OR SHAPE? OR MODEL? OR
              REPRESENTATION? OR SCENE?)
S5     417957   OBJECT??
S6    2643331   POSITION? OR PLACEMENT? OR LOCATION?
S7        185   POSTURE? AND ORIENTATION?
S8     116747   (MARKER? OR MARKS OR MARKING?)
S9         31   (SENSING OR SENSE OR DETECT? OR DETERMIN? OR ANALY? OR EST-
              IMAT? OR CALCULAT?) AND S6 AND S7
S10    249956   S1 AND (REDUC? OR SHRINK? OR COMPRESS?)
S11       170   (PLURAL? OR MANY OR NUMEROUS OR MULTI OR MULTIPLE OR SEVER-
              AL)(3N)SETS(3N)PARAMETER?
S12    235910   CAMERA?
S13      7099   (REGION OR AREA)(3N)EXTRACT?
S14    375322   IC=(G01B? OR B25J? OR G06K?)
S15         1   (S1 OR S2) AND (S3 OR S4) AND S9
S16       694   (S1 OR S2) AND (S3 OR S4) AND S8
S17         0   S16 AND S11 AND S13
S18         3   S16 AND S13
S19         3   S18 NOT S15
S20       216   S16 AND S14
S21         0   S20 AND S7
S22         6   S20 AND S6 AND ORIENTAT?
S23         6   S22 NOT (S18 OR S15)
```

15/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009533913 **Image available**
WPI Acc No: 1993-227454/199328
XRPX Acc No: N93-174522
Three - dimensional position **and** posture **measurement appts. - scans object with vertical and horizontal slit beams to obtain ridgeline data and** calculates position **using stored shape data**
Patent Assignee: FANUC LTD (FUFA)
Inventor: HIRAIZUMI M; SAKAKIBARA S
Number of Countries: 018 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9313383	A1	19930708	WO 92JP1647	A	19921217	199328 B
EP 573661	A1	19931215	WO 92JP1647	A	19921217	199350
			EP 93900392	A	19921217	
EP 573661	A4	19940413	EP 93900392	A	19930000	199530
US 5461478	A	19951024	WO 92JP1647	A	19921217	199548
			US 93108589	A	19930824	

Priority Applications (No Type Date): JP 92100340 A 19920326; JP 91356868 A 19911226
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9313383	A1	J	42	G01B-011/24	
Designated States (National): KR US					
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE					
EP 573661	A1	E		G01B-011/24	Based on patent WO 9313383
Designated States (Regional): DE IT SE					
US 5461478	A		17	G01B-011/14	Based on patent WO 9313383
EP 573661	A4			G01B-011/24	

Three - dimensional position **and** posture **measurement appts...**

...scans object with vertical and horizontal slit beams to obtain ridgeline data and calculates position **using stored shape data**

...Abstract (Basic): It is then scanned similarly with a horizontal slit beam (6H), and both sets of **images** are received by a CCD camera (4). The **images** are processed and from the bent and interrupted points on each scan line a set...

...of these data with stored shape data, obtd. before the start of scanning, allows the **position** and **posture** of the object to be obtd ...

...USE/ADVANTAGE - In robotics and factory automation, gives rapid and precise **positional sensing** of an object of any shape, even at short range...
...Abstract (Equivalent): A method for measuring **three - dimensional position** and **orientation** of an object, comprising the steps of...

...c) obtaining edge information of the object by processing **images** of the projected first and second slit lights; and...

...d) **determining** the **three - dimensional position** and **orientation** of the object based upon the edge information and previously obtained

shape information of the...
Title Terms: **THREE - DIMENSIONAL** ;

19/3,K/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

06641495 **Image available**
THREE - DIMENSIONAL POSITION POSTURE SENSING DEVICE

PUB. NO.: 2000-227309 [JP 2000227309 A]
PUBLISHED: August 15, 2000 (20000815)
INVENTOR(s): KOSAKA AKIO
SAITO AKITO
SHIBAZAKI TAKAO
ASANO TAKEO
MATSUZAKI HIROSHI
FURUHASHI YUKITO
APPLICANT(s): OLYMPUS OPTICAL CO LTD
APPL. NO.: 11-027359 [JP 9927359]
FILED: February 04, 1999 (19990204)

THREE - DIMENSIONAL POSITION POSTURE SENSING DEVICE

ABSTRACT

PROBLEM TO BE SOLVED: To obtain a **three - dimensional** position posture sensing device capable of stably estimating the **three - dimensional** position posture of an object without being affected by shield and the like.

SOLUTION: A **three - dimensional** position posture sensing device has an **image** input means for inputting an **image** 5 taken by an **image** device and of which **three dimensional** position information for a measuring object 1 is known and at least three **markers** 2 are **imaged**, a **region extraction** means **extracting** the **region** corresponding to each **marker** 2 on the **image** 5, a **marker** identifying means identifying individual means from the characteristic of outline of the **marker** 2 in the **extracted region**, and a position posture operation means operating the **three dimensional** position posture of the measuring object for the imaging device by using the position on the **image** 5 of each identified **marker** 2 and the **three dimensional** position posture of the measuring object of each **marker** 2.

19/3,K/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

02349503 **Image available**
POSITION RECOGNIZING INSTRUMENT FOR **THREE - DIMENSIONAL** OBJECT

PUB. NO.: 62-266403 [JP 62266403 A]
PUBLISHED: November 19, 1987 (19871119)
INVENTOR(s): TSUKADA HIROSHI
UNO SHINICHI
DOURO RIYUUHACHIROU
INOUE MITSUJI
APPLICANT(s): TOSHIBA CORP [000307] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 61-109659 [JP 86109659]
FILED: May 15, 1986 (19860515)

JOURNAL: Section: P, Section No. 698, Vol. 12, No. 147, Pg. 29, May 07, 1988 (19880507)

POSITION RECOGNIZING INSTRUMENT FOR **THREE - DIMENSIONAL** OBJECT

ABSTRACT

... be surely recognized by arranging the part located on a plane so that the projected **images** of the corners of the part are formed on the same plane and calculating the shadow information of the **images** by combining a plurality of pieces of the information...

... a circuit part 3a from an oblique direction (4) forms shadows 20a-20d. Accordingly, an **image** pickup camera picks up and stores (10a-10d) the shadows 20a-20d, an electrode 30, a white **marking** 32 and the like. A density converting circuit is set so that the electrode 30 and the **marking** 32 are clipped to prescribed values. Then, a difference between the **image** signals A and B of memories 10a and 10b, respectively, is calculated (11a) for every...

... difference signals E are outputted to an adding circuit 11c. Difference signals F between the **image** signals C and D of memories 10c and 10d, respectively, are outputted to the circuit 11c. Signals G are **extracted** as a **region** 36 with a zero density in the circuit 11c wherein the electrode 30 and the **marking** 32 are separated from each other. The signals G are binary-coded (12) to remove...

19/3,K/3 (Item 1 from file: 350)

010269804 **Image available**
WPI Acc No: 1995-171059/199523
XRPX Acc No: N95-134031

Automatic surface reconstruction system using point co-ordinates - uses optical markings **to identify required** area **for** extraction **of corresponding** three - dimensional image **point data via CCD camera**

Patent Assignee: MASSEN R (MASS-I)
Inventor: MASSEN R
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 4335121	A1	19950504	DE 4335121	A	19931017	199523	B

Priority Applications (No Type Date): DE 4335121 A 19931017
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 4335121	A1		6	G06F-017/50	

... **uses optical** markings **to identify required** area **for** extraction **of corresponding** three - dimensional image **point data via CCD camera**

...Abstract (Basic): edges of the required surface marked before the scanning of the object by an optical **three - dimensional** digitiser, providing signals which are processed by a two-dimensional **image** processor. The extracted **markings** are superimposed on the **three - dimensional** point data, to allow the points within the defined area to be selected for the...

...Pref. colour **markings** (1) are used to designate the surfaces to be reconstructed, scanned by a **three - dimensional** sensor with a colour

CCD camera (3), coupled to a **three - dimensional image** processor (5), identifying the marked areas and supplying the corresponding **image** point data to a CAD device...

...Title Terms: **THREE - DIMENSIONAL** ;

23/3,K/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014245750 **Image available**
WPI Acc No: 2002-066450/200209
XRPX Acc No: N02-049352
Method for measuring three dimensional **object or objects, comprises capture of** images **by two video cameras,** location **of simple contour forms and measurement of geometry,** position **and** orientation
Patent Assignee: CIE GEN MATIERES NUCLEAIRES (COGM); COMMISSARIAT ENERGIE ATOMIQUE (COMS); CIE GEN MATIERES NUCLEAIRES SA (COGM)
Inventor: COHEN L; DUMONT A; JALLON F; NAUDET S; SAYD P; VIALA M
Number of Countries: 023 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200181858	A1	20011101	WO 2001FR1274	A	20010426	200209 B
FR 2808326	A1	20011102	FR 20005392	A	20000427	200209
EP 1190208	A1	20020327	EP 2001929709	A	20010426	200229
			WO 2001FR1274	A	20010426	

Priority Applications (No Type Date): FR 20005392 A 20000427
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200181858	A1	F	41	G01B-011/00	
	Designated States (National): CA JP US				
	Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR				
FR 2808326	A1			G01D-005/26	
EP 1190208	A1	F		G01B-011/00	Based on patent WO 200181858
	Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR				

Method for measuring three dimensional **object or objects, comprises capture of** images **by two video cameras,** location **of simple contour** forms and measurement of geometry, position **and** orientation

Abstract (Basic):
... are connected to a memory (12) and processor (13). Simple contours are located on the **images** and the geometry, **positions** and **orientations** of the objects are measured. New **images** introduce new objects and allow previous knowledge to be refined.
... To measure **three dimensional** objects or assemblies of objects...

...Specific **marks** do not need to be added to the environment and the procedure is effective even...
...Title Terms: **IMAGE** ;
International Patent Class (Main): **G01B-011/00** ...
International Patent Class (Additional): **G01B-011/02** ...

... **G01B-011/16** ...

... **G01B-011/24**

23/3,K/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013720069 **Image available**
WPI Acc No: 2001-204299/200121
XRPX Acc No: N01-145924
Computer input device for providing position **and** orientation **with six degrees of freedom for use in manipulating a real or virtual** three - dimensional **object involves using camera to detect light from pattern of LEDs**
Patent Assignee: LUCENT TECHNOLOGIES INC (LUCE)
Inventor: KUMAR S; STAAB R R
Number of Countries: 028 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1074934	A2	20010207	EP 2000306259	A	20000724	200121	B
CA 2314548	A1	20010202	CA 2314548	A	20000726	200121	
JP 2001075726	A	20010323	JP 2000232696	A	20000801	200122	
US 6417836	B1	20020709	US 99366012	A	19990802	200253	

Priority Applications (No Type Date): US 99366012 A 19990802
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1074934	A2	E	17	G06K-011/08	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
CA 2314548	A1	E		G06F-003/033	
JP 2001075726	A		15	G06F-003/033	
US 6417836	B1			G09G-005/00	

Computer input device for providing position **and** orientation **with six degrees of freedom for use in manipulating a real or virtual** three - dimensional **object involves using camera to detect light from pattern of LEDs**

Abstract (Basic):
... type of detection device detects light from the light sources in order to determine the **position** , e.g., X,Y and Z **positional** parameters, and **orientation** , e.g., roll, pitch and yaw rotational parameters, of the input device.
... be used to detect and localize the light sources that are visible in a given **image** generated by the camera, to associate each of the light sources with a corresponding label, to determine the **position** and **orientation** information from the **positions** of the light sources in the **image** , and to communicate the **position** and **orientation** information to at least one application running on the computer system. INDEPENDENT CLAIMS are included for a method of providing **position** and **orientation** information with a number of degrees of freedom, and an article of manufacture containing one...

...Input device for use with computers and other display based processing systems for providing **position** and **orientation** information with six degrees of freedom for use in manipulating real or virtual objects in **three - dimensional** space...

...of light sources, each of which may have the same characteristics, making manufacture easier. No **orientation marks** are required and there are no constraints on the pattern of light sources as long as the light sources are distinguishable. Generates accurate **positional** and **orientation** values without nay scale ambiguity. More robust and less prone to noise related distortions than...
...Title Terms: **POSITION** ;
...International Patent Class (Main): **G06K-011/08**

23/3,K/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

013525295 **Image available**
WPI Acc No: 2001-009501/200102
XRAM Acc No: C01-002538
XRPX Acc No: N01-007162

Calibration of beam stereolithography equipment making three dimensional **object, employs co-ordinate reference points on calibration plate, to determine and correct beam** position **discrepancy through controller**

Patent Assignee: EOS GMBH ELECTRO OPTICAL SYSTEMS (EOSE-N)
Inventor: LOHNER A; PHILIPPI J
Number of Countries: 027 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1048441	A1	20001102	EP 2000107895	A	20000412	200102	B
DE 19918613	A1	20001130	DE 1018613	A	19990423	200102	
JP 2000326416	A	20001128	JP 2000119348	A	20000420	200110	
EP 1048441	B1	20020206	EP 2000107895	A	20000412	200211	
DE 50000111	G	20020321	DE 500111	A	20000412	200221	
			EP 2000107895	A	20000412		
US 6483596	B1	20021119	US 2000557065	A	20000421	200280	

Priority Applications (No Type Date): DE 1018613 A 19990423
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 1048441	A1	G	12	B29C-067/00	
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
DE 19918613	A1			B23K-026/00	
JP 2000326416	A		8	B29C-067/00	
EP 1048441	B1	G		B29C-067/00	
Designated States (Regional): DE FR GB IT					
DE 50000111	G			B29C-067/00	Based on patent EP 1048441
US 6483596	B1			G01B-011/14	

Calibration of beam stereolithography equipment making three dimensional **object, employs co-ordinate reference points on calibration plate, to determine and correct beam** position **discrepancy through controller**

Abstract (Basic):
... Calibration of beam stereolithography equipment making **three dimensional** object, involves employing co-ordinate reference points on calibration plate, to determine and correct beam **position** discrepancy through controller.
... plate, to determine a machine co-ordinate system. The beam is deflected to predetermined, desired **locations** within the co-ordinate system. Differences between actual and desired **positions** of the beam are measured using the references. Beam deflection is adjusted by the controller...

...text. The beam is electromagnetic or particulate (vis. sub-atomic or other particles). The test **image** is produced rapidly, in about 30 seconds, during which system drift is insignificant. The irradiation...
Technology Focus:
... Preferred Features: The calibration unit (60) is arranged at a known **position** in the machine co-ordinate system. Of its two regions

(61, 71) the first has...

...80, 82). The second includes a beam-sensitive medium (63) (e.g. film). A test **image** is produced by illuminating the medium with the beam, at given desired **positions** as a function of the co-ordinates. First and second regions of the calibration unit are digitized using the references and the test **image** . Digitized references are compared with the test **image** and correction data are derived, to control the beam unit. The calibration unit is a calibration plate. The first **position** is near or under the second. As test **image** , a number of registration crosses (64) are employed, forming a grid of co-ordinates. The method produces a **three - dimensional** object by solidification of successive layers using the energetic beam. The object is produced on a plate as described, and subsequent processing and/or **orientation** employs the **marks** on the plate.
...Title Terms: **POSITION** ;
...International Patent Class (Main): **G01B-011/14**

23/3,K/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

013333714 **Image available**
WPI Acc No: 2000-505653/200045
XRPX Acc No: N00-373962
Determination system of position **and** orientation **of probe in** 3D **space, determines** location **of** markers **to define** position **and** orientation **of probe by passing electromagnetic radiation from** markers **to sensor**
Patent Assignee: IMAGE GUIDED TECHNOLOGIES INC (IMAG-N)
Inventor: FAUL I; SCHULZ W A
Number of Countries: 091 Number of Patents: 004
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200039576	A1	20000706	WO 99US30494	A	19991222	200045	B
AU 200022042	A	20000731	AU 200022042	A	19991222	200050	
EP 1153292	A1	20011114	EP 99966527	A	19991222	200175	
			WO 99US30494	A	19991222		
JP 2002533721	W	20021008	WO 99US30494	A	19991222	200281	
			JP 2000591424	A	19991222		

Priority Applications (No Type Date): US 98113803 P 19981223
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200039576	A1	E	27	G01N-033/00	
AU 200022042	A			G01N-033/00	Based on patent WO 200039576
EP 1153292	A1	E		G01N-033/00	Based on patent WO 200039576
JP 2002533721	W		23	G01B-007/00	Based on patent WO 200039576

Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

Determination system of position **and** orientation **of probe in** 3D **space, determines** location **of** markers **to define** position **and**

orientation **of probe by passing electromagnetic radiation from** markers **to sensor**

Abstract (Basic):
... A wired or wireless radio sends electromagnetic radiation from **markers** (24) to radiation sensors (26) to determine **marker location** to define probe **position** and **orientation** . Angles of **markers** sensed by sensor are converted into **locations** and **positions** and is compared with that detected by non-electromagnetic sensor. A computer calibrates the accuracy of non-electromagnetic sensor relative to **position** and **orientation** of probe.
... Electromagnetic radiation sensors (26) detect the **image** of each light emitting or reflecting **marker** (24) on a probe (20). The **location** of **images** of **markers** are sent to a controller (72) via a wire or wireless radio. Each **image** is processed into sensor coordinates and is transmitted to a coordinate computer (76...

...For determining **position** and **orientation** of probes and other rigid bodies in **3D** space...

...of movement of tracking system combination as compared to any of individual tracking technologies. Improves **position** measurement that combines the precision and robustness of light based tracking with another tracking system...

...The figure shows the schematic block diagram of determination system of **position** and **orientation** of probe in **3D** space...
...Reflecting **marker** (24...
...Title Terms: **POSITION** ;
International Patent Class (Main): **G01B-007/00** ...
International Patent Class (Additional): **G01B-011/00**

23/3,K/5 (Item 5 from file: 350)
DIALOG(R)File 350:Derwent WPIX

010858176 **Image available**
WPI Acc No: 1996-355127/199636
XRPX Acc No: N96-299496
Three dimensional **optical measurement of surface of objects - calibrates measured surface using homologous marked points or calibration surfaces on object surface, using** image **triangulation in frames of combined network beam equalisation**
Patent Assignee: WOLF H (WOLF-I)
Inventor: WOLF H
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 19502459	A1	19960801	DE 1002459	A	19950128	199636	B

Priority Applications (No Type Date): DE 1002459 A 19950128
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19502459	A1		8	G01B-011/24	

Three dimensional **optical measurement of surface of objects...**

...**calibrates measured surface using homologous marked points or calibration surfaces on object surface, using** image **triangulation in frames of combined network beam equalisation**

...Abstract (Basic): The **3D** measurement measures the surface of an object (1). Variable light structures are projected onto the...

...of the illuminated surface is recorded by a video camera (3). The inner and outer **orientations** of the camera and the projector are determined by calibration. The coordinates of the points on the object surface corresponding to **image** points are calculated...

...least from a direction different from the projection direction with the projector in the same **position** and direction. With the help of homologous fixed **markers** (4) on the object surface or other calibration surfaces arranged statically relative to the object...
...Title Terms: **IMAGE** ;
International Patent Class (Main): **G01B-011/24**
International Patent Class (Additional): **G01B-011/30** ...

23/3,K/6 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

008328919 **Image available**
WPI Acc No: 1990-215920/199028
XRPX Acc No: N90-167679
Needle indicator angular position **meter - uses calculator to fix angle of needle according to sector with maximum illumination**
Patent Assignee: PENZA POLY (PEPO)
Inventor: ABULKHANOV R A; DRZHEVETSK A L; LEVIN A B
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
SU 1532812	A	19891230	SU 4328434	A	19871016	199028	B

Priority Applications (No Type Date): SU 4328434 A 19871016

Needle indicator angular position **meter**...

...Abstract (Basic): The **image** of the needle of the tested instrument is projected onto a target of CCO read-out unit (1), the video-signal from which is passed to code **marks** shaper (2) and to extremum **shaper** (**3**). Synchronising pulses pass to the shaper (2) which passes codes of the sectors of the test instrument to the address input of the **shaper** (**3**). The measurements of the **image** , corresp. to the mean value of a illumination of the element of the line pass to calculator (4). **Orientation** of the sectors of the instrument relative to the scanned area is carried out so...

...their pattern forms a discrete area corresp. to the scale of the instrument. The angular **position** of the needle of the instrument is determined in the calculator (4) and the result...

...unit 1 is in the form of a TV pickup to prevent distortion of the **image** during overlaying of the **images** of the object and a template...

...USE - Control of angular **positions** of indicators of needle instruments. Bul. 48/30.12.89 (10pp Dwg.NO.1/8)
...Title Terms: **POSITION** ;
International Patent Class (Additional): **G01B-021/00**

```
File 344:Chinese Patents Abs Aug 1985-2002/Dec
         (c) 2003 European Patent Office
File 347:JAPIO Oct 1976-2002/Sep(Updated 030102)
         (c) 2003 JPO & JAPIO
File 348:EUROPEAN PATENTS 1978-2003/Jan W05
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030130,UT=20030123
         (c) 2003 WIPO/Univentio
File 350:Derwent WPIX 1963-2003/UD,UM &UP=200307
         (c) 2003  Thomson Derwent
? ds

Set     Items   Description
S1       5326   AU=(ASANO, T? OR MATSUZAKI,  H? OR FURUHASHI, Y? OR ASANO -
           T? OR MATSUZAKI H? OR FURUHASHI Y?)
S2       6035   AU=(KOSAKA, A? OR SAITO, A? OR SHIBASAKI, T? OR KOSAKA A? -
           OR SAITO A? OR SHIBASAKI T?)
S3        113   (S1 OR S2) AND (THREE-DIMENSIONA? OR 3D OR THREE()DIMENSIO-
           NAL?)
S4         11   S3 AND SENSING
```

4/5,K/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

07370341 **Image available**
ENDOSCOPE SYSTEM

PUB. NO.: 2002-238839 [JP 2002238839 A]
PUBLISHED: August 27, 2002 (20020827)
INVENTOR(s): MORISANE YUICHI
KAJI KUNIHIDE
KAGAWA HIROAKI
HAGIWARA MASAHIRO
KIKUCHI YASUHIKO
KIMURA SHUICHI
TAKAHASHI YASUSHI
SAITO AKITO
NAKAMURA TAKEAKI
NAKAMITSU TAKECHIYO
APPLICANT(s): OLYMPUS OPTICAL CO LTD
APPL. NO.: 2001-040502 [JP 20011040502]
FILED: February 16, 2001 (20010216)
INTL CLASS: A61B-001/00; G02B-023/26; H04N-007/18

ABSTRACT

PROBLEM TO BE SOLVED: To provide an endoscope system capable of making automatic changeover of observation conditions and insertion speed according to various lumen shape.

SOLUTION: A **three - dimensional** internal organ model of a part to which endoscopy is carried out, and setting information for setting the suitable observation conditions when observing the part with an endoscope 2, are previously stored in a database 6A. When the endoscope 2 is actually inserted to carry out endoscopy, the magnetic field generated by a source coil disposed at the distal end 19 of the endoscope 2 for position detection is detected by a **sensing** coil to detect the position of the distal end 19. Further, an image processor 11 determines which position in the **three - dimensional** internal organ model the position of the detected distal end 19 corresponds to, by image processing. According to the position information, the corresponding setting information is read from the database 6a and sent to a CPU in a video processor 4. The CPU automatically adjusts color balance, the illuminating light quantity of a light source device 3, and the like by each circuit in the video processor 4 so as to be suitable for the observation state.

INVENTOR(s): MORISANE YUICHI
KAJI KUNIHIDE
KAGAWA HIROAKI
HAGIWARA MASAHIRO
KIKUCHI YASUHIKO
KIMURA SHUICHI
TAKAHASHI YASUSHI
SAITO AKITO
NAKAMURA TAKEAKI
NAKAMITSU TAKECHIYO

ABSTRACT

... automatic changeover of observation conditions and insertion speed according to various lumen shape.

SOLUTION: A **three - dimensional** internal organ model of a part to which endoscopy is carried out, and setting information...

... the distal end 19 of the endoscope 2 for position detection is detected by a **sensing** coil to detect the position of the distal end 19. Further, an image processor 11 determines which position in the **three - dimensional** internal organ model the position of the detected distal end 19 corresponds to, by image...

4/5,K/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO

07221679 **Image available**
THREE - DIMENSIONAL POSITION AND ATTITUDE **SENSING** DEVICE

PUB. NO.: 2002-090118 [JP 2002090118 A]
PUBLISHED: March 27, 2002 (20020327)
INVENTOR(s): AKATSUKA YUICHIRO
SAITO AKITO
SHIBAZAKI TAKAO
APPLICANT(s): OLYMPUS OPTICAL CO LTD
APPL. NO.: 2000-284318 [JP 2000284318]
FILED: September 19, 2000 (20000919)
INTL CLASS: G01B-011/00; G01B-011/26; G06T-001/00

ABSTRACT

PROBLEM TO BE SOLVED: To provide a **three - dimensional** position and attitude **sensing** device capable of performing a measurement in a wide range when analyzing the photographed image of a known marker whose position and attitude relation with an object is known and determining the relative position and attitude relation between the marker and a photographic means to determine the position and attitude of the object.
SOLUTION: In this **three - dimensional** position and attitude **sensing** device, the image of one code marker 5 of a plurality of code markers 5 photographed in an image photographic part 1 is analyzed, and the relative position and attitude relation between the code marker 5 and the image photographic part 1 is determined to determine the **three - dimensional** position and attitude relation between the object 4 and the image photographic part 1.

THREE - DIMENSIONAL POSITION AND ATTITUDE **SENSING** DEVICE

INVENTOR(s): AKATSUKA YUICHIRO
SAITO AKITO
SHIBAZAKI TAKAO

ABSTRACT

PROBLEM TO BE SOLVED: To provide a **three - dimensional** position and attitude **sensing** device capable of performing a measurement in a wide range when analyzing the photographed image...

... a photographic means to determine the position and attitude of the object.

SOLUTION: In this **three - dimensional** position and attitude **sensing** device, the image of one code marker 5 of a plurality of code markers 5...

... the code marker 5 and the image photographic part 1 is determined to determine the **three - dimensional** position and attitude relation between the object 4 and the image photographic part 1.

4/5,K/3 (Item 3 from file: 347)
DIALOG(R)File 347:JAPIO

06834282 **Image available**
OPERATION IMAGE RECORDER

PUB. NO.: 2001-061776 [JP 2001061776 A]
PUBLISHED: March 13, 2001 (20010313)
INVENTOR(s): **SAITO AKITO**
SHIBAZAKI TAKAO
MATSUZAKI HIROSHI
ASANO TAKEO
FURUHASHI YUKITO
KOSAKA AKIO
APPLICANT(s): OLYMPUS OPTICAL CO LTD
APPL. NO.: 11-241916 [JP 99241916]
FILED: August 27, 1999 (19990827)
INTL CLASS: A61B-001/04; A61B-019/00; G02B-021/18

ABSTRACT

PROBLEM TO BE SOLVED: To enable the smooth progression of an operation without requiring the recording start/recording stop operation of the observing image by an operator by providing the above device with a detecting means for detecting the position and posture of an observing means for observing an operation part and instructing recording start/recording stop to an image recording means.

SOLUTION: During the operation of the device, a sensor controller 5e causes plural IR LEDs 5a arranged to a triangular shape of a position and posture sensor 5 to emit light sequentially and calculates the **three - dimensional** positions and postures of **sensing** plates 5b and 5c from the output of a sensor assembly 5d of this time. An image controller 7 receives the **three - dimensional** position and posture information at every specified period and decides whether the endoscope 2 exists near the operation part or not form the **three - dimensional** position and posture information. When the controller decides YES, the controller gives an instruction to switch the microscope observation image to the endoscope observation image to instruct the recording start to an endoscope VTR 9 from the **three - dimensional** position and posture information. When, on the other hand, the controller decides NO, the controller switches the endoscope observation image to the microscope observation image and instructs the recording start to a microscope VTR 8.

INVENTOR(s): **SAITO AKITO**
SHIBAZAKI TAKAO
MATSUZAKI HIROSHI
ASANO TAKEO
FURUHASHI YUKITO
KOSAKA AKIO

ABSTRACT

... shape of a position and posture sensor 5 to emit light sequentially and calculates the **three - dimensional** positions and postures of **sensing** plates 5b and 5c from the output of a sensor assembly 5d of this time. An image controller 7 receives the **three - dimensional** position and posture information at every specified period and decides whether the endoscope 2 exists near the operation part or not form the **three - dimensional** position and posture information. When the controller decides YES, the controller gives an instruction to...

... endoscope observation image to instruct the recording start to an endoscope VTR 9 from the **three - dimensional** position and posture information. When, on the other hand, the controller decides NO, the controller...

4/5,K/4 (Item 4 from file: 347)
DIALOG(R)File 347:JAPIO

06764862 **Image available**
OPERATION IMAGING DISPLAY APPARATUS

PUB. NO.: 2000-350734 [JP 2000350734 A]
PUBLISHED: December 19, 2000 (20001219)
INVENTOR(s): **SAITO AKITO**
SHIBAZAKI TAKAO
KOSAKA AKIO
ASANO TAKEO
MATSUZAKI HIROSHI
FURUHASHI YUKITO
APPLICANT(s): OLYMPUS OPTICAL CO LTD
APPL. NO.: 11-163964 [JP 99163964]
FILED: June 10, 1999 (19990610)
INTL CLASS: A61B-019/00; A61B-001/04; G02F-001/13357

ABSTRACT

PROBLEM TO BE SOLVED: To enable a smooth operation progress without switchover operation of observed system by operator when operation is conducted by jointly using operation microscope and plural observation systems by providing a directing means for directing what image should be displayed on an image display means adapting to the position and posture of the observed part.

SOLUTION: While an operation image pickup display apparatus is working, a sensor controller 5e makes each infrared LED 5a emit light sequentially, measures the **three - dimensional** position of each infrared LED 5a from output of a sensor assembly 5d, and calculates the **three - dimensional** position and posture of **sensing** plates 5b and 5c using the LED definition data memorized in a sensor controller 5e. An image controlling controller 7 calculates the relative distance and direction between a patient 6 operating part and an operation microscope 1 or an endoscope 2 by the **three - dimensional** position and posture information, sends direction to a video mixer 3, when the endoscope 2 is judged to be near the operating part, to switch over to the endoscope observation image, and, when the endoscope 2 is judged not to be near the operating part, to the microscope observation image, and displays the observed image on an LC display 4.

INVENTOR(s): **SAITO AKITO**
SHIBAZAKI TAKAO
KOSAKA AKIO
ASANO TAKEO
MATSUZAKI HIROSHI
FURUHASHI YUKITO

ABSTRACT

... working, a sensor controller 5e makes each infrared LED 5a emit light sequentially, measures the **three - dimensional** position of each infrared LED 5a from output of a sensor assembly 5d, and calculates the **three - dimensional** position and posture of **sensing** plates 5b and 5c using the LED definition data memorized in a sensor controller 5e...

...patient 6 operating part and an operation microscope 1 or an endoscope 2 by the **three - dimensional** position and posture information, sends direction to a video mixer 3, when the endoscope 2...

4/5,K/5 (Item 5 from file: 347)
DIALOG(R)File 347:JAPIO

06641495 **Image available**
THREE - DIMENSIONAL POSITION POSTURE **SENSING** DEVICE

PUB. NO.: 2000-227309 [JP 2000227309 A]
PUBLISHED: August 15, 2000 (20000815)
INVENTOR(s): **KOSAKA AKIO**
SAITO AKITO
SHIBAZAKI TAKAO
ASANO TAKEO
MATSUZAKI HIROSHI
FURUHASHI YUKITO
APPLICANT(s): OLYMPUS OPTICAL CO LTD
APPL. NO.: 11-027359 [JP 9927359]
FILED: February 04, 1999 (19990204)
INTL CLASS: G01B-011/00; B25J-019/04

ABSTRACT

PROBLEM TO BE SOLVED: To obtain a **three - dimensional** position posture **sensing** device capable of stably estimating the **three - dimensional** position posture of an object without being affected by shield and the like.
SOLUTION: A **three - dimensional** position posture **sensing** device has an image input means for inputting an image 5 taken by an image device and of which **three dimensional** position information for a measuring object 1 is known and at least three markers 2 are imaged, a region extraction means extracting the region corresponding to each marker 2 on the image 5, a marker identifying means identifying individual means from the characteristic of outline of the marker 2 in the extracted region, and a position posture operation means operating the **three dimensional** position posture of the measuring object for the imaging device by using the position on the image 5 of each identified marker 2 and the **three dimensional** position posture of the measuring object of each marker 2.

THREE - DIMENSIONAL POSITION POSTURE **SENSING** DEVICE

INVENTOR(s): **KOSAKA AKIO**
SAITO AKITO
SHIBAZAKI TAKAO
ASANO TAKEO
MATSUZAKI HIROSHI
FURUHASHI YUKITO

ABSTRACT

PROBLEM TO BE SOLVED: To obtain a **three - dimensional** position posture **sensing** device capable of stably estimating the **three - dimensional** position posture of an object without being affected by shield and the like.

SOLUTION: A **three - dimensional** position posture **sensing** device has an image input means for inputting an image 5 taken by an image device and of which **three dimensional** position information for a measuring object 1 is known and at least three markers 2...

... the marker 2 in the extracted region, and a position posture operation means operating the **three dimensional** position posture of the measuring object for the imaging device by using the position on the image 5 of each identified marker 2 and the **three dimensional** position posture of the measuring object of each marker 2.

4/5,K/6 (Item 6 from file: 347)

05357715 **Image available**
TWO-DIMENSIONAL DISTANCE SENSOR

PUB. NO.: 08-313215 [JP 8313215 A]
PUBLISHED: November 29, 1996 (19961129)
INVENTOR(s): KATO MASAHIKO
MATSUZAKI HIROSHI
MOROKUMA HAJIME
NAKAMURA TSUTOMU
MATSUMOTO KAZUYA
NOMOTO TETSUO
MIZOGUCHI TOYOKAZU
APPLICANT(s): OLYMPUS OPTICAL CO LTD [000037] (A Japanese Company or Corporation), JP (Japan)
APPL. NO.: 07-146949 [JP 95146949]
FILED: May 23, 1995 (19950523)
INTL CLASS: [6] G01B-011/00; G01C-003/06
JAPIO CLASS: 46.1 (INSTRUMENTATION -- Measurement)
JAPIO KEYWORD:R002 (LASERS); R096 (ELECTRONIC MATERIALS -- Glass Conductors); R097 (ELECTRONIC MATERIALS -- Metal Oxide Semiconductors, MOS); R098 (ELECTRONIC MATERIALS -- Charge Transfer Elements, CCD & BBD); R116 (ELECTRONIC MATERIALS -- Light Emitting Diodes, LED)

ABSTRACT

PURPOSE: To provide a depth map directly without mechanical scanning of an illuminating light by making possible attainment of **three - dimensional** distance information on an object on the basis of the distribution of signal charges of a two-dimensional image- **sensing** element.

CONSTITUTION: A light beam subjected to luminance modulation by a prescribed frequency is emitted from an illuminating device 2. The image of an object 1 illuminated by this light beam is formed on a two-dimensional image- **sensing** element 4 through an imaging optical system 3 and the information is read out by driving the element 4 by a processing circuit 5. At this time, a phase shift corresponding to a **three - dimensional** structure of the object 1 occurs in an illuminating light on each pixel sensed by the element 4. By constructing the element 4 so that the light photosensitivity can be modulated by a prescribed frequency, a large amount of signal charge is stored in the pixel wherein the phase of the sensed illuminated light and that of the photosensitivity of the element 4 coincide with each other, while only a small amount is stored in the pixel wherein they do not coincide. In other words, the detection of the phase of the sensed illuminating light is executed in each pixel and the amount of the charge stored consequently represents distance information on the object 1 directly.

INVENTOR(s): KATO MASAHIKO
MATSUZAKI HIROSHI
MOROKUMA HAJIME
NAKAMURA TSUTOMU
MATSUMOTO KAZUYA
NOMOTO TETSUO
MIZOGUCHI TOYOKAZU

ABSTRACT

... depth map directly without mechanical scanning of an illuminating light by making possible attainment of **three - dimensional** distance information on an object on the basis of the distribution of signal charges of a two-dimensional image- **sensing** element...

... an object 1 illuminated by this light beam is formed on a two-dimensional image- **sensing** element 4 through an imaging optical system 3 and the information is read out by...
... 4 by a processing circuit 5. At this time, a phase shift corresponding to a **three - dimensional** structure of the object 1 occurs in an illuminating light on each pixel sensed by...

4/5,K/7 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01017950
Liquid jet recording substrate, recording head and apparatus using same
Substrat fur einen Flussigkeitsstrahl-Aufzeichnungskopf, Druckkopf und damit versehne Druckvorrichtung
Substrat pour tete d'enregistrement a liquide, tete d'mprimante et appareil utilisant celui-ci
PATENT ASSIGNEE:
CANON KABUSHIKI KAISHA, (542361), 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo, (JP), (applicant designated states: AT;BE;CH;DE;ES;FR;GB;GR;IT;LI;LU;NL;SE)
INVENTOR:
Ishinaga, Hiroyuki, 6-17-2 Minamisenju, Arakawa-ku, Tokyo, (JP)
Ikeda, Masami, CANON KABUSHIKI KAISHA 30-2, 3-Chome Shimomaruko, Ohta-ku Tokyo, (JP)
Koizumi, Ryoichi, CANON KABUSHIKI KAISHA 30-2, 3-Chome, Shimomaruko, Ohta-ku Tokyo, (JP)

Saito, Asao , CANON KABUSHIKI KAISHA 30-2, 3-Chome Shimomaruko, Ohta-ku Tokyo, (JP)
Watanabe, Kenjiro, 7-31-2 Ikagami, Ohta-ku, Tokyo, (JP)
Abe, Tsutomu, 4-2-1-604 Higashinaruse, Isehara-shi, Kanagawa-ken, (JP)
Kuwabara, Nobuyuki, CANON KABUSHIKI KAISHA 30-2, 3-Chome Shimomaruko, Ohta-ku Tokyo, (JP)
Fukuda, Tsuguhiro, CANON KABUSHIKI KAISHA 30-2, 3-Chome Shimomaruko, Ohta-ku Tokyo, (JP)
Katoh, Tsutomu, Canon-ryo, 872 Shimonoge, Takatsu-ku, Kawasaki-shi, Kanagawa-ken, (JP)
Mori, Toshihiro, Canon-ryo, 872 Shimonoge, Takatsu-ku, Kawasaki-shi, Kanagawa-ken, (JP)
Karita, Seiichiro, 4-20-101 Shinishikawa, Midori-ku, Yokohama-shi, Kanagawa-ken, (JP
LEGAL REPRESENTATIVE:
Beresford, Keith Denis Lewis et al (28273), BERESFORD & Co. 2-5 Warwick Court High Holborn, London WC1R 5DJ, (GB)
PATENT (CC, No, Kind, Date): EP 911169 A2 990428 (Basic)
EP 911169 A3 990707
APPLICATION (CC, No, Date): EP 98203903 890724;
PRIORITY (CC, No, Date): JP 88184685 880726; JP 88184686 880726; JP 88184699 880726; JP 88194481 880805; JP 88293630 881122; JP 88294621 881124; JP 88294622 881124; JP 88323683 881223; JP 89184416 890719
DESIGNATED STATES: AT; BE; CH; DE; ES; FR; GB; GR; IT; LI; LU; NL; SE
RELATED PARENT NUMBER(S) - PN (AN):
EP 593133 (EP 932032758)
INTERNATIONAL PATENT CLASS: B41J-002/16;

ABSTRACT EP 911169 A2
A substrate for liquid ejection includes a built-in energy generating element for generating thermal energy, a built-in electrode wiring portion for supplying an electric signal to the energy generating element, and a built-in diode or transistor for detecting a temperature of the substrate.
ABSTRACT WORD COUNT: 44

LEGAL STATUS (Type, Pub Date, Kind, Text):

Examination:	010228 A2	Date of dispatch of the first examination report: 20010110
Examination:	20000119 A2	Date of request for examination: 19991119
Application:	990428 A2	Published application (A1with Search Report ;A2without Search Report)
Search Report:	990707 A3	Separate publication of the European or International search report
Change:	990818 A2	Inventor information changed: 19990625

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9917	1116
SPEC A	(English)	9917	17992
Total word count - document A			19108
Total word count - document B			0
Total word count - documents A + B			19108

INVENTOR:
... JP)
Saito, Asao ...

...SPECIFICATION as defined in Paragraph (3), wherein at least a part of each of said temperature **sensing** element is on an extension of the array:

(8) A substrate as defined in Paragraph...of the sensor changes linearly with respect to the temperature change so that correct temperature **sensing** operation is possible. This is particularly so, when aluminum is used as the temperature **sensing** element.

(Second Embodiment)
Referring to Figure 5 showing the second embodiment, a differentiator 31 is...in, the substrate heater 8 are built in the substrate 1, and therefore, correct temperature **sensing** and efficient heating are assured. In this embodiment, those element are partly overlapped with the ...

...therefore, they are covered by their upper and lower heat insulating layers, whereby the temperature **sensing** and the heating actions are not disturbed.
Referring back to Figure 20, the common chamber...VFb)), VFc)), VFd)) and Ve)) are forward voltage drops by the diode 3a, 3b, 3c, **3d** and 3e, respectively.
Figure 24 shows the results of measurement of the temperature change on ...28 - 40, another embodiment will be described in more detail with respect to the temperature **sensing** or the like, using the recording head 500 described above.
Referring first to Figures 28...the temperature control in this manner. In this Figure, references S1 and S2 designate temperature **sensing** portions which correspond to the two temperature sensors 2 on the **substrate** 1, respectively. Heating...system. In the structure of this Figure, the outputs of the temperature sensors 2 (temperature **sensing** portions S1 and S2) on the substrate 1 are amplified by the amplifiers 71 and...substrate according to clause 3, wherein at least a part of each of said temperature **sensing** element is on an extension of the array.
8. A substrate according to clause 7...

4/5,K/8 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00597984
Ink jet head, ink jet head cartridge and ink jet apparatus using same
Tintenstrahlkopf, Tintenstrahlkopfpatrone und diese verwendende Tintenstrahlvorrichtung
Tete a jet d'encre, cartouche de tete a jet d'encre et appareil a jet d'encre utilisant ladite
PATENT ASSIGNEE:
CANON KABUSHIKI KAISHA, (542361), 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo, (JP), (Proprietor designated states: all)
INVENTOR:
Ishinaga, Hiroyuki, 6-17-2 Minamisenju, Arakawa-ku, Tokyo, (JP)
Ikeda, Masami, c/o Canon K.K., 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo , (JP)
Koizumi, Ryoichi, c/o Canon K.K., 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo, (JP)
Saito, Asao , c/o Canon K.K., 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo , (JP)
Watanabe, Kenjiro, 7-31-2 Ikegami, Ohta-ku, Tokyo, (JP)
Abe, Tsutomu, 4-2-1-604 Higashinaruse, Isehara-shi, Kanagawa-ken, (JP)
Kuwabara, Nobuyuki, c/o Canon K.K., 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo, (JP)
Fukuda, Tsuguhiro, 1061-6-212 Ichigao, Midori-ku, Yokohama-shi, Kanagawa-ken, (JP)

Katoh, Tsutomu, Canon-ryo, 872 Shimonoge, Takatsu-ku, Kawasaki-shi, Kanagawa-ken, (JP)
Mori, Toshihiro, Canon-ryo, 872 Shimonoge, Takatsu-ku, Kawasaki-shi, Kanagawa-ken, (JP)
Karita, Seiichiro, 4-20-101 Shinishikawa, Midori-ku, Yokohama-shi, Kanagawa-ken, (JP
LEGAL REPRESENTATIVE:
Beresford, Keith Denis Lewis et al (28273), BERESFORD & Co. High Holborn 2-5 Warwick Court, London WC1R 5DJ, (GB)
PATENT (CC, No, Kind, Date): EP 593133 A2 940420 (Basic)
EP 593133 A3 940803
EP 593133 B1 991006
APPLICATION (CC, No, Date): EP 93203275 890724;
PRIORITY (CC, No, Date): JP 88184685 880726; JP 88184686 880726; JP 88184699 880726; JP 88194481 880805; JP 88293630 881122; JP 88294621 881124; JP 88294622 881124; JP 88323683 881223; JP 89184416 890719
DESIGNATED STATES: AT; BE; CH; DE; ES; FR; GB; GR; IT; LI; LU; NL; SE
RELATED PARENT NUMBER(S) - PN (AN):
EP 353925 (EP 89307506)
RELATED DIVISIONAL NUMBER(S) - PN (AN):
EP 911169 (EP 98203903)
INTERNATIONAL PATENT CLASS: B41J-002/16
CITED PATENTS (EP B): GB 2169856 A; US 4550327 A; US 4601777 A; US 4719472 A; US 4740800 A

ABSTRACT EP 593133 A2
A substrate (1) for liquid ejection includes a built-in energy generating element (3) for generating thermal energy, a built-in electrode wiring portion (624G) for supplying an electric signal to the energy generating element, and a built-in diode or transistor (2) for detecting a temperature of the substrate (1). (see image in original document)
ABSTRACT WORD COUNT: 55
NOTE:
Figure number on first page: 20

LEGAL STATUS (Type, Pub Date, Kind, Text):

Oppn None:	000920	B1	No opposition filed: 20000707
Application:	940420	A2	Published application (A1with Search Report ;A2without Search Report)
Change:	940518	A2	Inventor (change)
Search Report:	940803	A3	Separate publication of the European or International search report
Examination:	950215	A2	Date of filing of request for examination: 941216
Examination:	960228	A2	Date of despatch of first examination report: 960112
Change:	980603	A2	Title of invention (German) (change)
Change:	980603	A2	Title of invention (English) (change)
Change:	980603	A2	Title of invention (French) (change)
Change:	991006	A2	Inventor information changed: 19990817
Grant:	991006	B1	Granted patent

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9940	457
CLAIMS B	(German)	9940	402
CLAIMS B	(French)	9940	478
SPEC B	(English)	9940	15742
Total word count - document A			0
Total word count - document B			17079

Total word count - documents A + B 17079

INVENTOR:
... JP)
Saito, Asao ...

...SPECIFICATION of the sensor changes linearly with respect to the temperature change so that correct temperature **sensing** operation is possible. This is particularly so, when aluminum is used as the temperature **sensing** element.
Referring to Figure 5 showing a second example, a differentiator 31 is provided before...in, the substrate heater 8 are built in the substrate 1, and therefore, correct temperature **sensing** and efficient heating are assured. In this embodiment, those element are partly overlapped with the ...

...therefore, they are covered by their upper and lower heat insulating layers, whereby the temperature **sensing** and the heating actions are not disturbed.
Referring back to Figure 20, the common chamber...VFb)), VFc)), VFd)) and Ve)) are forward voltage drops by the diode 3a, 3b, 3c, **3d** and 3e, respectively.
Figure 24 shows the results of measurement of the temperature change on ...the temperature control in this manner. In this Figure, references S1 and S2 designate temperature **sensing** portions which correspond to the two temperature sensors 2 on the substrate 1, respectively. Heating... system. In the structure of this Figure, the outputs of the temperature sensors 2 (temperature **sensing** portions S1 and S2) on the substrate 1 are amplified by the amplifiers 71 and...

4/5,K/9 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00480121
Ink jet recording system
Tintenstrahlaufzeichnungssystem
Systeme d'enregistrement a jet d'encre
PATENT ASSIGNEE:
CANON KABUSHIKI KAISHA, (542361), 30-2, 3-chome, Shimomaruko, Ohta-ku, Tokyo, (JP), (applicant designated states: DE;FR;GB;IT;NL)
INVENTOR:
Fujita, Kei, c/o Canon Kabushiki Kaisha, 3-30-2, Shimomaruko, Ohta-ku, Tokyo 146, (JP)
Saito, Asao , c/o Canon Kabushiki Kaisha, 3-30-2, Shimomaruko, Ohta-ku, Tokyo 146, (JP)
Matsumoto, Shigeyuki, c/o Canon Kabushiki Kaisha, 3-30-2, Shimomaruko, Ohta-ku, Tokyo 146, (JP
LEGAL REPRESENTATIVE:
Beresford, Keith Denis Lewis et al (28273), BERESFORD & Co. 2-5 Warwick Court High Holborn, London WC1R 5DJ, (GB)
PATENT (CC, No, Kind, Date): EP 440459 A1 910807 (Basic)
EP 440459 B1 970806
APPLICATION (CC, No, Date): EP 91300739 910130;
PRIORITY (CC, No, Date): JP 9019320 900131
DESIGNATED STATES: DE; FR; GB; IT; NL
INTERNATIONAL PATENT CLASS: B41J-002/05; H01L-027/08; H01L-049/02;
CITED PATENTS (EP A): US 4887098 A; US 4429321 A; US 4246593 A; EP 369347 A ; EP 401440 A

CITED REFERENCES (EP A):

PROCEEDINGS OF THE S.I.D. vol. 23, no. 3, 1982, pages 187-195, Los Angeles, CA, US; B. CHOY et al.: "A high-voltage IC chip set for use as el panel drivers"

idem

ELECTRONIC DESIGN vol. 32, no. 3, February 1984, pages 37,38, Waseca, MN, Denville, NJ, US; S. OHR: "DMOS-CMOS process points to highest power rating for smart power control";

ABSTRACT EP 440459 A1

A recording head (IJC) comprises electrothermal transducers (940) for jetting ink and functional devices (1-19, 50) for driving these electrothermal transducers (940), both of which are arranged on a single substrate plate (1). The functional devices comprise a pair of major electrode regions (4,5) such as drain and source arranged on the substrate plate (1), a region (19) comprising control electrode region and surrounding one of electrode regions (5) used to be grounded, an insulating layer (18) arranged on the control electrode region (19) and a control electrode (8) arranged on the insulating layer (18). The control layer alters the semiconductor types of a boundary surface of the control electrode region (19) by applying a control voltage through the insulating layer (18) and as a result a current flow between major electrode regions, source (5) and drain (4), is controlled. (see image in original document)

ABSTRACT WORD COUNT: 147

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	910807	A1	Published application (A1with Search Report ;A2without Search Report)
Examination:	920226	A1	Date of filing of request for examination: 911223
Examination:	930908	A1	Date of despatch of first examination report: 930726
Grant:	970806	B1	Granted patent
Oppn None:	980729	B1	No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	2263
CLAIMS B	(English)	9708W1	962
CLAIMS B	(German)	9708W1	935
CLAIMS B	(French)	9708W1	1079
SPEC A	(English)	EPABF1	13375
SPEC B	(English)	9708W1	9549
Total word count - document A			15639
Total word count - document B			12525
Total word count - documents A + B			28164

INVENTOR:

... JP)

Saito, Asao ...

...SPECIFICATION view showing the MOS transistor array taken along line A-A1 in Fig. 3B;

Fig. **3D** is a connection diagram showing a connection of a driving circuit using the MOS transistor...

...showing an equivalent circuit to the circuit of the MOS transistor array shown in Fig. **3D** ;

Fig. 4A through Fig. 4D are sectional views showing the MOS

transistor array shown in...of the MOS transistor array taken along line A-A1 in Fig. 3B, and Fig. **3D** illustrates an example of connection in the MOS transistor array. Fig. 3E illustrates an equivalent circuit to the circuit of the MOS transistor array shown in Fig. **3D** . In the Fig. 3B through Fig. 3E, similar reference numerals refer to similar elements.

The...ink jet recording system so as to form an electric circuit as shown in Fig. **3D** and Fig. 3E.

The followings are one embodiment of an equipment equipped with the recording...generate a signal to indicate that the carriage HC is in a home position by **sensing** an existence of a lever 5006 in the region where photo-couplers are placed. The...

...SPECIFICATION view showing the MOS transistor array taken along line A-A1 in Fig. 3B;

Fig. **3D** is a connection diagram showing a connection of a driving circuit using the MOS transistor...

...showing an equivalent circuit to the circuit of the MOS transistor array shown in Fig. **3D** ;

Fig. 4A through Fig. 4D are sectional views showing the MOS transistor array shown in...of the MOS transistor array taken along line A-A1 in Fig. 3B, and Fig. **3D** illustrates an example of connection in the MOS transistor array. Fig. 3E illustrates an equivalent circuit to the circuit of the MOS transistor array shown in Fig. **3D** . In the Fig. 3B through Fig. 3E, similar reference numerals refer to similar elements.

The...ink jet recording system so as to form an electric circuit as shown in Fig. **3D** and Fig. 3E.

The followings are one embodiment of an equipment equipped with the recording...generate a signal to indicate that the carriage HC is in a home position by **sensing** an existence of a lever 5006 in the region where photo-couplers are placed. The...

4/5,K/10 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00367689
Ink jet recording substrate, recording head and apparatus using same.
Farbstrahlaufzeichnungstragerschicht, Aufzeichnungskopf und damit versehene Vorrichtung.
Couche de base pour enregistrement a jet d'encre, tete d'enregistrement et appareil l'utilisant.
PATENT ASSIGNEE:
CANON KABUSHIKI KAISHA, (542363), 3-30-2 Shimomaruko Ohta-ku, Tokyo 146, (JP), (applicant designated states: AT;BE;CH;DE;ES;FR;GB;GR;IT;LI;LU;NL;SE)
INVENTOR:
Ishinaga, Hiroyuki, 6-17-2 Minamisenju, Arakawa-ku Tokyo, (JP)
Ikeda, Masami, 1-6-19-904 Seijo, Setagaya-ku Tokyo, (JP)
Koizumi, Ryoichi, 303-203 Ohbacho Midori-ku, Yokohama-shi Kanagawa-ken, (JP)
Saito, Asao , 5-33-11-201 Utsukushigaoka Midori-ku, Yokohama-shi Kanagawa-ken, (JP)
Watanabe, Kenjiro, 7-31-2 Ikegami, Ohta-ku Tokyo, (JP)
Abe, Tsutomu, 4-2-1-604 Higashinaruse, Isehara-shi Kanagawa-ken, (JP)
Kuwabara, Nobuyuki, 1-3-10 Okusawa, Setagaya-ku Tokyo, (JP)
Fukuda, Tsuguhiro, 1061-6-212 Ichigao Midori-ku, Yokohama-shi Kanagawa-ken, (JP)

Katoh, Tsutomu, Canon-ryo 872 Shimonoge Takatsu-ku, Kawasaki-shi Kanagawa-ken, (JP)
Mori, Toshihiro, Canon-ryo 872 Shimonoge Takatsu-ku, Kawasaki-shi Kanagawa-ken, (JP)
Karita, Seiichiro, 4-20-101 Shinishikawa Midori-ku, Yokohama-shi Kanagawa-ken, (JP

LEGAL REPRESENTATIVE:
Beresford, Keith Denis Lewis et al (28273), BERESFORD & Co. 2-5 Warwick Court High Holborn, London WC1R 5DJ, (GB)

PATENT (CC, No, Kind, Date): EP 353925 A2 900207 (Basic)
EP 353925 A3 900816
EP 353925 B1 950322

APPLICATION (CC, No, Date): EP 89307506 890724;

PRIORITY (CC, No, Date): JP 88184685 880726; JP 88184686 880726; JP 88184699 880726; JP 88194481 880805; JP 88293630 881122; JP 88294621 881124; JP 88294622 881124; JP 88323683 881223; JP 89184416 890719

DESIGNATED STATES: AT; BE; CH; DE; ES; FR; GB; GR; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS: B41J-002/16;

CITED PATENTS (EP A): US 4719472 A; GB 2169856 A; US 4550327 A; US 4601777 A

ABSTRACT EP 353925 A2

A substrate (1) for liquid ejection includes a built-in energy generating element (3) for generating thermal energy, a built-in electrode wiring portion (4) for supplying an electric signal to the energy generating element, and a built-in temperature detecting element (2) for detecting a temperature of the substrate.

ABSTRACT WORD COUNT: 51

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application:	900207	A2	Published application (A1with Search Report ;A2without Search Report)
Search Report:	900816	A3	Separate publication of the European or International search report
Examination:	910306	A2	Date of filing of request for examination: 901231
Examination:	920930	A2	Date of despatch of first examination report: 920812
Grant:	950322	B1	Granted patent
Oppn None:	960313	B1	No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	922
CLAIMS B	(English)	EPAB95	862
CLAIMS B	(German)	EPAB95	863
CLAIMS B	(French)	EPAB95	1003
SPEC A	(English)	EPABF1	17202
SPEC B	(English)	EPAB95	15697
Total word count - document A			18125
Total word count - document B			18425
Total word count - documents A + B			36550

INVENTOR:
... JP)
Saito, Asao ...

...SPECIFICATION as defined in Paragraph (3), wherein at least a part of each of said temperature **sensing** element is on an extension of the array:
(8) A substrate as defined in Paragraph...of the sensor changes linearly with respect to the temperature change so that correct

temperature **sensing** operation is possible. This is particularly so, when aluminum is used as the temperature **sensing** element.
(Second Embodiment)
Referring to Figure 5 showing the second embodiment, a differentiator 31 is...in, the substrate heater 8 are built in the substrate 1, and therefore, correct temperature **sensing** and efficient heating are assured. In this embodiment, those element are partly overlapped with the ...

...therefore, they are covered by their upper and lower heat insulating layers, whereby the temperature **sensing** and the heating actions are not disturbed.
Referring back to Figure 20, the common chamber...Fd)) and V(sub(e)) are forward voltage drops by the diode 3a, 3b, 3c, **3d** and 3e, respectively.
Figure 24 shows the results of measurement of the temperature change on ...28 - 40, another embodiment will be described in more detail with respect to the temperature **sensing** or the like, using the recording head 500 described above.
Referring first to Figures 28...the temperature control in this manner. In this Figure, references S1 and S2 designate temperature **sensing** portions which correspond to the two temperature sensors 2 on the substrate 1, respectively. Heating...system. In the structure of this Figure, the outputs of the temperature sensors 2 (temperature **sensing** portions S1 and S2) on the substrate 1 are amplified by the amplifiers 71 and...

...SPECIFICATION of the sensor changes linearly with respect to the temperature change so that correct temperature **sensing** operation is possible. This is particularly so, when aluminium used as the temperature **sensing** element.
(Second Embodiment)
Referring to Figure 5 showing an alternate detecting circuit, a differentiator 31...and the substrate heaters 8 are built-in in the substrate1, and therefore, correct temperature **sensing** and efficient heating are assured. In this embodiment, those elements are partly overlapped with the...

...therefore, they are covered by their upper and lower heat insulating layers, whereby the temperature **sensing** and the heating actions are not disturbed.
Referring back to Figure 20, the common chamber...Fd)) and V(sub(e)) are forward voltage drops by the diode 3a, 3b, 3c, **3d** and 3e, respectively.
Figure 24 shows the results of measurement of the temperature change on ...28 - 40, another embodiment will be described in more detail with respect to the temperature **sensing** or the like, using the recording head 500 described above.
Referring first to Figures 28...the temperature control in this manner. In this Figure, references S1 and S2 designate temperature **sensing** portions which correspond to the two temperature sensors 2 on the substrate 1, respectively. Heating...system. In the structure of this Figure, the outputs of the temperature sensors 2 (temperature **sensing** portions S1 and S2) on the substrate 1 are amplified by the amplifiers 71 and...

...CLAIMS substrate according to Claim 3, wherein at least a part of each of said temperature **sensing** element is on an extension of the array.
8. A substrate according to Claim 7...

4/5,K/11 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014601028 **Image available**
WPI Acc No: 2002-421732/200245
Related WPI Acc No: 2002-335823
XRPX Acc No: N02-331848

Three - dimensional position attitude sensing device measures relative three - dimensional position attitude of object, based on calculated relative position attitude of marker with respect to camera

Patent Assignee: OLYMPUS OPTICAL CO LTD (OLYU)
Inventor: AKATSUKA Y; **SAITO A** ; **SHIBASAKI T**
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002090118	A	20020327	JP 2000284318	A	20000919	200245 B
US 20020052709	A1	20020502	US 2001951873	A	20010913	200245

Priority Applications (No Type Date): JP 2000284318 A 20000919; JP 2000283292 A 20000919
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2002090118	A		13	G01B-011/00	
US 20020052709	A1			G01C-009/00	

Abstract (Basic): JP 2002090118 A

NOVELTY - The image of a marker (5), identified by an identification unit, is analyzed. The **three - dimensional** position attitude relation of an object (4) is calculated, based on the computed relative position attitude of the marker with respect to the camera.

USE - For measuring relative **three - dimensional** position attitude of object.

ADVANTAGE - The **three - dimensional** position attitude is measured in comparatively large area.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the **three - dimensional** position attitude **sensing** device. (Drawing includes non-English language text).

Object (4)
Marker (5)
pp; 13 DwgNo 1/10

Title Terms: THREE; DIMENSION; POSITION; ATTITUDE; SENSE; DEVICE; MEASURE; RELATIVE; THREE; DIMENSION; POSITION; ATTITUDE; OBJECT; BASED; CALCULATE; RELATIVE; POSITION; ATTITUDE; MARK; RESPECT; CAMERA
Derwent Class: S02; T01
International Patent Class (Main): G01B-011/00; G01C-009/00
International Patent Class (Additional): G01B-011/26; G06T-001/00
File Segment: EPI

Three - dimensional position attitude sensing device measures relative three - dimensional position attitude of object, based on calculated relative position attitude of marker with respect to...
...Inventor: **SAITO A** ...

... **SHIBASAKI T**

Abstract (Basic):
... The image of a marker (5), identified by an identification unit,

is analyzed. The **three - dimensional** position attitude relation of an object (4) is calculated, based on the computed relative position...

... For measuring relative **three - dimensional** position attitude of object...

...The **three - dimensional** position attitude is measured in comparatively large area...

...The figure shows the block diagram of the **three - dimensional** position attitude **sensing** device. (Drawing includes non-English language text ...

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File   2:INSPEC 1969-2003/Jan W4
         (c) 2003 Institution of Electrical Engineers
File   6:NTIS 1964-2003/Feb W1
         (c) 2003 NTIS, Intl Cpyrght All Rights Res
File   8:Ei Compendex(R) 1970-2003/Jan W4
         (c) 2003 Elsevier Eng.  Info. Inc.
File  34:SciSearch(R) Cited Ref Sci 1990-2003/Jan W4
         (c) 2003 Inst for Sci Info
File  35:Dissertation Abs Online 1861-2003/Jan
         (c) 2003 ProQuest Info&Learning
File  65:Inside Conferences 1993-2003/Feb W1
         (c) 2003 BLDSC all rts. reserv.
File  94:JICST-EPlus 1985-2003/Nov W3
         (c)2003 Japan Science and Tech Corp(JST)
File  95:TEME-Technology & Management 1989-2003/Jan W3
         (c) 2003 FIZ TECHNIK
File  99:Wilson Appl. Sci & Tech Abs 1983-2003/Dec
         (c) 2003 The HW Wilson Co.
File 144:Pascal 1973-2003/Jan W4
         (c) 2003 INIST/CNRS
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
         (c) 1998 Inst for Sci Info
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
         (c) 2002 The Gale Group
File 603:Newspaper Abstracts 1984-1988
         (c)2001 ProQuest Info&Learning
File 483:Newspaper Abs Daily 1986-2003/Jan 31
         (c) 2003 ProQuest Info&Learning
File 248:PIRA 1975-2003/Jan W4
         (c) 2003 Pira International
? ds

Set     Items   Description
S1    3079377   IMAGE? OR PICTURE? OR GRAPHIC? OR PHOTOS OR PHOTOGRAPH?? OR
               PHOTO
S2     113963   PIXEL? OR PEL OR PICTURE()ELEMENT? OR PICEL?? OR PIXCEL??
S3     275526   3D
S4     867201   (THREE OR THIRD OR 3)(3N)(DIMENSION? OR SHAPE? OR MODEL? OR
              REPRESENTATION? OR SCENE?)
S5     904368   OBJECT??
S6    2069168   POSITION? OR PLACEMENT? OR LOCATION?
S7       1638   POSTURE? AND ORIENTATION?
S8     501339   (MARKER? OR MARKS OR MARKING?)
S9        505   (SENSING OR SENSE OR DETECT? OR DETERMIN? OR ANALY? OR EST-
              IMAT? OR CALCULAT?) AND S6 AND S7
S10    286588   S1 AND (REDUC? OR SHRINK? OR COMPRESS?)
S11      1007   (PLURAL? OR MANY OR NUMEROUS OR MULTI OR MULTIPLE OR SEVER-
              AL)(3N)SETS(3N)PARAMETER?
S12    255293   CAMERA?
S13      5992   (REGION OR AREA)(3N)EXTRACT?
S14     10421   AU=(ASANO, T? OR MATSUZAKI, H? OR FURUHASHI, Y? OR ASANO T?
              OR MATSUZAKI H? OR FURUHASHI Y?)
S15         7   (S1 OR S2) AND (S3 OR S4) AND S8 AND S9
S16         3   S15 NOT PY=>2000
S17         3   RD S16 (unique items)
S18        46   S14 AND S1 AND S4
S19         0   S18 AND S7
S20         1   S18 AND S8
S21         0   S18 AND (S9 OR S13)
S22        17   S18 AND (SENSING OR SENSE OR DETECT? OR DETERMIN? OR ANALY?
              OR ESTIMAT? OR CALCULAT?)
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S23          16   S22 NOT S20
S24           7   S23 NOT PY=>2000
S25           6   RD S24 (unique items)
```

17/3,K/1 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05747819 Genuine Article#: WV175 No. References: 12
Title: Multiple anatomical landmark calibration for optimal bone pose estimation
Author(s): Cappello A (REPRINT) ; Cappozzo A; LaPalombara PF; Lucchetti L; Leardini A
Corporate Source: UNIV BOLOGNA,DIPARTIMENTO ELETTRON INFORMAT & SISTEMIST, VIALE RISORGIMENTO 2/I-40136 BOLOGNA//ITALY/ (REPRINT); UNIV ROMA LA SAPIENZA,IST FISIOL UMANA/ROME//ITALY/; UNIV SASSARI,CATTEDRA TECNOL BIOMED/I-07100 SASSARI//ITALY/; IST ORTOPED RIZZOLI,LAB ANAL MOVIMENTO/BOLOGNA//ITALY/
Journal: HUMAN MOVEMENT SCIENCE, 1997, V16, N2-3 (APR), P259-274
ISSN: 0167-9457 Publication date: 19970400
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

Title: Multiple anatomical landmark calibration for optimal bone pose estimation
Abstract: Bone motion **estimation** by means of photogrammetric, non-invasive methods can be severely corrupted by experimental errors. The largest fraction of such errors is associated with the relative movement between externally located **markers** and the underlying bone, due to the interposition of both passive and active soft tissues. The errors affecting the **estimates** of anatomical landmarks trajectories in the laboratory frame can be considerably reduced by following the...

...of the anatomical landmarks in a technical reference frame defined by the cluster of skin **markers** , and (ii) the use of a rigid model of the cluster. This paper illustrates how...

...of the above-mentioned protocol, involving a multiple calibration of the anatomical landmarks in different **postures** , and the use of a deformable model of the cluster, can effectively enhance bone motion **estimation** . In order to validate the new protocol a cycling test on a patient wearing a...

...over 15 mm to less than 10 mm while the RMSEs of the bone (femur) **orientation** and **position** decrease respectively from about 5 deg and 7 mm with our previous protocol to less...
Research Fronts: 95-1309 001 (2-DIMENSIONAL **IMAGE** DATA; **DETERMINING** RIGID-BODY TRANSFORMATION PARAMETERS; VISION-BASED SURFACE STRAIN-MEASUREMENT SYSTEM)

17/3,K/2 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05488273 Genuine Article#: WC231 No. References: 21
Title: COMBINED EFFECTS OF ERRORS IN FRONTAL-VIEW ASYMMETRY DIAGNOSIS
Author(s): PIRTTINIEMI P; MIETTINEN J; KANTOMAA T
Corporate Source: UNIV OULU,DEPT ORTHODONT,INST DENT/SF-90220 OULU//FINLAND/
Journal: EUROPEAN JOURNAL OF ORTHODONTICS, 1996, V18, N6 (DEC), P629-636
ISSN: 0141-5387
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

Abstract: The aim of the present investigation was to **determine** the relative extent of geometric error and errors in point identification in postero-anterior roentgenography...

...roentgenographs, first using the dry skulls as such, and then the same skulls with metal **markers** inserted to show the exact **locations** of the cephalometric points. Consistency and normal variation in the reproducibility of head **position** in the cephalostat between repeated roentgenographs were studied by a **photographic** technique in a group of young healthy adults, measuring the extent of minor head movements. Geometric error was **calculated** using a computer-aided design program (CAD) by rotating the **three - dimensional** co-ordinates of the cephalometric landmarks and thus obtaining projection error in the frontal view.

Accuracy in cephalometric point identification was best in dental landmarks and vertical **orientation** of superior orbital margins. Geometric error was least when landmarks near the anterior midsagittal plane...

...other. Width measurements from frontal-view cephalograms are most sensitive to minor movements in head **posture** . Due to combined errors, the use of width measurements in facial asymmetry diagnosis should not ...

...since variance in errors in landmark identification can be larger than that in actual landmark **location** .

17/3,K/3 (Item 1 from file: 35)
DIALOG(R)File 35:Dissertation Abs Online

01792745 ORDER NO: AADAA-IMQ53586
Interface humain-machine de detection **visuelle de la** posture **de la main (French text)**
Author: Lathuiliere, Fabienne
Degree: M.Sc.A.
Year: 1999
Corporate Source/Institution: Ecole Polytechnique, Montreal (Canada) (1105)
Source: VOLUME 39/02 of MASTERS ABSTRACTS.
PAGE 563. 155 PAGES
ISBN: 0-612-53586-X

Interface humain-machine de detection **visuelle de la** posture **de la main (French text)**

We propose a real-time visual hand tracking and **posture estimation** system to guide a robotic arm in gripping gestures. We have opted for an easy...

...and robust human-computer interface. Our approach has been chosen so as to track hand **posture** in an **image** sequence in real time with a single camera **detecting** color cues on the hand. We present an original twenty-six degree-of-freedom kinematic model of the hand, for which forward and inverse kinematics formulations have been developed. The **location** of the hand is given by the wrist's middle point and its **orientation** is given by that of the palm. Each finger has four degrees of freedom, namely ...

...dark glove marked with colored cues on the upper palm and on each fingertip. The **position** of the color **markers** in the **image** is used to reconstruct first the pose of the palm and then all the joint...

...palm, by another finger, or by its own phalanxes) are handled by predicting the finger **positions** , which are then validated by testing **3D** geometric visibility conditions. The overall good performance of the hand **posture** reconstruction is validated on a **graphic** hand model developed with the OpenGL **graphic** library. Experiments carried out on **graphical** and real **image** sequences have led to meaningful **3D** hand configurations. (Abstract shortened by UMI.)

20/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05645174 E.I. No: EIP00095308073
Title: Augmented reality system for surgical navigation using robust target vision
Author: Kosaka, Akio; Saito, Akito; **Furuhashi, Yukihito** ; Shibasaki, Takao
Corporate Source: Olympus Optical Co, Ltd, Tokyo, Jpn
Conference Title: CVPR '2000: IEEE Conference on Computer Vision and Pattern Recognition
Conference Location: Hilton Head Island, SC, USA Conference Date: 19000613-19000615
E.I. Conference No.: 57189
Source: Proceedings of the IEEE Computer Society Conference on Computer Vision and Pattern Recognition v 2 2000. IEEE, Los Alamitos, CA, USA. p 187-194
Publication Year: 2000
CODEN: PIVRE9 ISSN: 1063-6919
Language: English

Author: Kosaka, Akio; Saito, Akito; **Furuhashi, Yukihito** ; Shibasaki, Takao
...Abstract: monocular vision algorithm to estimate the 3D pose of surgical tools, utilizing specially designed code **markers** and Kalman filter-based position updating. The vision system is not impaired by occlusion and...

...illumination. The augmented reality system super-imposes the 3D object wireframe onto the live viewing **image** taken from the surgical microscope as well as displaying other useful navigation information, while allowing ...

...viewing. The experimental results verified the robustness and usefulness of the system, and acquired the **image** registration error less than 2 mm. (Author abstract) 10 Refs.
Descriptors: Computer vision; Surgery; Algorithms; **Three dimensional** ; Kalman filtering; Microscopes; **Image** processing
Identifiers: Augmented reality system; Surgical navigation; Robust target vision; **Image** registration; Code **markers** ; Position updating; Real time monocular vision algorithm

25/3,K/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05567805 E.I. No: EIP40055179016
Title: 6-DOF haptic interface for neurosurgical simulation system
Author: **Asano, Takeo** ; Saito, Akito; Kosaka, Akio; **Furuhashi, Yukihiko** ; **Matsuzaki, Hiroshi** ; Akatsuka, Yuichiro; Shibasaki, Takao
Corporate Source: Olympus Optical Co, Ltd, Tokyo, Jpn
Conference Title: Dynamic Systems and Control Division - 1999 (The ASME International Mechanical Engineering Congress and Exposition)
Conference Location: Nashville, TN, USA Conference Date: 19991114-19991119
E.I. Conference No.: 56775
Source: American Society of Mechanical Engineers, Dynamic Systems and Control Division (Publication) DSC v 67 1999. p 393-399
Publication Year: 1999
CODEN: ASMDEV ISBN: 0-7918-1634-6
Language: English

Author: **Asano, Takeo** ; Saito, Akito; Kosaka, Akio; **Furuhashi, Yukihiko** ; **Matsuzaki, Hiroshi** ; Akatsuka, Yuichiro; Shibasaki, Takao
...Abstract: can pick up the region of interest to specify the disease portion from DICOM format **image** data, then **three - dimensional model** have made by volume and surface rendering with this data. In the next step, system **estimates** and indicates on CRT the minimally invasive path from the head surface to the disease target that was picked up beforehand by this system which retains healthy human's **three - dimensional** atlas data. Finally, the operator can perform a virtual surgery operation by the haptic interface...
...Descriptors: Neurosurgery; User interfaces; Sensory perception; Virtual reality; Degrees of freedom (mechanics); Learning systems; Personal computers; **Three dimensional**

25/3,K/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04440149 E.I. No: EIP96073236622
Title: FEM analysis **of sound wave propagation in the vocal tract with 3 -D radiational** model
Author: **Matsuzaki, Hiroki** ; Miki, Nobuhiro; Ogawa, Yoshihiko
Corporate Source: Hokkaido Univ, Sapporo, Jpn
Source: Journal of the Acoustical Society of Japan (E) (English translation of Nippon Onkyo Gakkaishi) v 17 n 3 May 1996. p 163-166
Publication Year: 1996
CODEN: JASED2 ISSN: 0388-2861
Language: English

Title: FEM analysis **of sound wave propagation in the vocal tract with 3 -D radiational** model
Author: **Matsuzaki, Hiroki** ; Miki, Nobuhiro; Ogawa, Yoshihiko
Abstract: A new **3** -D radiational **model** for FEM simulation is proposed and used to compute sound wave propagation in vocal tract...
Descriptors: Acoustic wave propagation; Finite element method; Computer simulation; **Three dimensional** computer **graphics** ; Musculoskeletal system; Boundary conditions; Computational methods; Numerical methods; Transfer functions
Identifiers: Vocal tract; **Three dimensional** radiational **model** ;

Radiational aperture; Sound pressure; Particle velocity; Plane wave model; Acoustic wave equation

25/3,K/3 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

03043834 Genuine Article#: MZ353 No. References: 40
Title: DIRECT EVIDENCE OF INDUCTION OF INTERDIGITATED GEL STRUCTURE IN LARGE UNILAMELLAR VESICLES OF DIPALMITOYLPHOSPHATIDYLCHOLINE BY ETHANOL - STUDIES BY EXCIMER METHOD AND HIGH-RESOLUTION ELECTRON CRYOMICROSCOPY
Author(s): YAMAZAKI M; MIYAZU M; **ASANO T** ; YUBA A; KUME N
Corporate Source: UNIV CALIF SAN DIEGO,DEPT BIOL/LA JOLLA//CA/92093; UNIV SHIZUOKA,FAC SCI,DEPT PHYS/SHIZUOKA 422//JAPAN/; KYOTO UNIV,FAC PHARMACEUT SCI,DEPT PHARMACOGNOSY/KYOTO/KYOTO 606/JAPAN/; KYOTO UNIV,FAC SCI,DEPT BIOPHYS/KYOTO/KYOTO 606/JAPAN/
Journal: BIOPHYSICAL JOURNAL, 1994, V66, N3 (MAR), P729-733
ISSN: 0006-3495
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

Author(s): YAMAZAKI M; MIYAZU M; **ASANO T** ; YUBA A; KUME N
...Abstract: hydrated DPPC LUVs in a vitreous ice were observed at 4K with HiRECM, and these **images** were characterized by a pair of concentric circles. The membrane thickness of DPPC LUV which was **estimated** from the distance between the two concentric fines decreased largely at high concentration of ethanol...

...those obtained from the electron density profile of DPPC MLV by the x-ray diffraction **analysis** in each structures, L(beta') and L(beta 1) structures, respectively. These results indicated directly...
...Identifiers-- **3 - DIMENSIONAL** STRUCTURE; MULTILAMELLAR VESICLES; CHAIN INTERDIGITATION; PHOSPHOLIPID-VESICLES; ETHYLENE-GLYCOL; OSMOTIC-STRESS; ACYL CHAIN; MICROSCOPY; PHASE
Research Fronts: 92-0291 002 (CRYOELECTRON MICROSCOPY; **3 - DIMENSIONAL** RECONSTRUCTION; TOBACCO MOSAIC-VIRUS)
92-0636 002 (BACTERIAL PHOTOSYNTHETIC REACTION CENTER; PROTEIN CHROMOPHORE INTERACTIONS IN...

...SPHAEROIDES)
92-0414 001 (HIGH-RESOLUTION ELECTRON-MICROSCOPY; DIGITAL HOLOGRAPHY; REMOVED ATOMS IN SURFACE PROFILE **IMAGES**)

25/3,K/4 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03020274 JICST ACCESSION NUMBER: 96A0883773 FILE SEGMENT: JICST-E
Usefulness of Preoperative Three - dimensional Image **for Surgical Treatment of a Huge Hepatocellular Carcinoma.**
MORIYA H (1); ISOGAI A (1); **ASANO T** (1); HASEGAWA K (1); HANEJI K (1); OKAMOTO N (1); WATANABE T (1); MORIKUBO M (1); YAMAGUCHI S (1)
(1) St. Marianna Univ. School of Medicine, Kawasaki, JPN
Sei Marianna Ika Daigaku Zasshi(St. Marianna Medical Journal), 1996, VOL.24,NO.3, PAGE.252-256, FIG.8, REF.5
JOURNAL NUMBER: Z0605AAW ISSN NO: 0387-2289
UNIVERSAL DECIMAL CLASSIFICATION: 616-073.916 616.3-006
LANGUAGE: English COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal

ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

Usefulness of Preoperative Three - dimensional Image **for Surgical Treatment of a Huge Hepatocellular Carcinoma.**
MORIYA H (1); ISOGAI A (1); **ASANO T** (1); HASEGAWA K (1); HANEJI K (1); OKAMOTO N (1); WATANABE T (1); MORIKUBO M (1); YAMAGUCHI S...
(1)
...ABSTRACT: the tumor occupies over half of the liver volume. It is important, althouh difficult, to **determine** whether hepatectomy is indicated when the tumor is exceptionally large and involves large vessels, such...

...vein and/or the inferior vena cava. There are some reports suggesting that computer-reconstructed **images** using spiral CT of hepatic and portal veins are useful, but this requires an expensive equipment. We are using a personal laptop computer and studying **three - dimensional images** reconstructed from conventional CT scanning, using **images** to **determine** whether HCCs in individuals are resectable or not. (author abst.)
...DESCRIPTORS: **three dimension** ; ...

...stereoscopic **image** ; ...

... **image** processing
...BROADER DESCRIPTORS: **image** technology...

... **image** ;

25/3,K/5 (Item 2 from file: 94)
DIALOG(R)File 94:JICST-EPlus

02243947 JICST ACCESSION NUMBER: 94A0905899 FILE SEGMENT: JICST-E
Mode of Recurrence of Hilar Bile duct Carcinoma, and Importance of Occupational Diagnosis and Liver Functional Reserve Assessment.
ASANO TAKEHIDE (1); ENOMOTO KAZUO (1); YAMAMOTO HIROSHI (1); KOBAYASHI SUSUMU (1); NAGASHIMA TORU (1); UEMATSU TAKESHI (1); AMANO HODAKA (1); NAKAGOORI TOSHIO (1); ISONO KAICHI (1)
(1) Chiba Univ., Sch. of Med.
Nippon Shokaki Geka Gakkai Zasshi(Japanese Journal of Gastroenterological Surgery), 1994, VOL.27,NO.10, PAGE.2332-2336, FIG.6, TBL.3, REF.6
JOURNAL NUMBER: Z0340BAB ISSN NO: 0386-9768
UNIVERSAL DECIMAL CLASSIFICATION: 616.3-006 616-006-07
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

ASANO TAKEHIDE (1); ENOMOTO KAZUO (1); YAMAMOTO HIROSHI (1); KOBAYASHI SUSUMU (1); NAGASHIMA TORU (1); UEMATSU TAKESHI (1); AMANO HODAKA (1); NAKAGOORI TOSHIO...
(1)
...ABSTRACT: accurate diagnosis of hepatic side cancer invasion, we recommend cine-cholangiography because it provides fine **3 dimensional** rotating cholangiograms. We could, therefore, observe each bifurcation of hepatic duct without overalapping. To assess...

...method. Further, ongoing studies of 11C-methionine positron emission

tomography of the liver could provide **images** of functional localization. Therefore, it may become a good tool for liver functional reserve **analysis** in the near future. (author abst.)
...BROADER DESCRIPTORS: **image** technology

25/3,K/6 (Item 3 from file: 94)
DIALOG(R)File 94:JICST-EPlus

01476112 JICST ACCESSION NUMBER: 92A0129028 FILE SEGMENT: JICST-E
Research report on spin-off benefit of three - dimensional **circuit elements and future view.(Sponsor : New Energy Development Organization).**
ASANO TANEMASA (1); AKIYAMA SHIGENOBU (2); ONGA SHINJI (3); KAWAI KAZUHIKO (4); ISHIHARA HIROSHI (5); KUNIO TAKEMITSU (6); NISHIMURA TADASHI (7); TANIGUCHI KENJI (8)
Shinkinososhikenkyukaihatsukyo
(1) Kyushu Inst. of Technology, Computer Science and Systems Engineering ; (2) Matsushita Electric Industrial Co., Ltd.; (3) Toshiba Corp.; (4)Sanyo Electric Co., Ltd.; (5) Tokyo Inst. of Technology, Res. Lab. of Precision Machinery and Electronics; (6) NEC Corp.; (7) Mitsubishi Electric Corp.; (8) Osaka Univ., Faculty of Engineering
Sanjigen Kairo Soshi no Hakyu Koka to Shorai Tenbo ni kansuru Chosa Kenkyu Hokokusho. Heisei 3nen, 1991, PAGE.203P
JOURNAL NUMBER: N19920244G
UNIVERSAL DECIMAL CLASSIFICATION: 621.382.2/.3.049.77
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
Research report on spin-off benefit of three - dimensional **circuit elements and future view.(Sponsor : New Energy Development Organization)....**
ASANO TANEMASA (1)
...ABSTRACT: basis technology. Reduction of wiring lenth and increase of degree of freedom in wiring by **three - dimensional** solutions, faster operation of elements and circuits due to the SOI structure and omnidirectional study...

...and signal processing functions in the layered structure. It has contour extraction functions, movement object **detection** functions and character discrimination ability.(1991.10).
...DESCRIPTORS: **three dimension** ; ...

... **image** processing...

...edge **detection**
...BROADER DESCRIPTORS: **detection**

```
File 256:SoftBase:Reviews,Companies&Prods. 82-2003/Dec
         (c)2003 Info.Sources Inc
? ds

Set     Items   Description
S1      23054   IMAGE? OR PICTURE? OR GRAPHIC? OR PHOTOS OR PHOTOGRAPH?? OR
              PHOTO
S2        574   PIXEL? OR PEL OR PICTURE()ELEMENT? OR PICEL?? OR PIXCEL??
S3       4763   3D
S4        636   (THREE OR THIRD OR 3)(3N)(DIMENSION? OR SHAPE? OR MODEL? OR
              REPRESENTATION? OR SCENE?)
S5      11097   OBJECT??
S6       7476   POSITION? OR PLACEMENT? OR LOCATION?
S7          0   POSTURE? AND ORIENTATION?
S8       3336   (MARKER? OR MARKS OR MARKING?)
S9          0   (SENSING OR SENSE OR DETECT? OR DETERMIN? OR ANALY? OR EST-
              IMAT? OR CALCULAT?) AND S6 AND S7
S10      2088   S1 AND (REDUC? OR SHRINK? OR COMPRESS?)
S11         2   (PLURAL? OR MANY OR NUMEROUS OR MULTI OR MULTIPLE OR SEVER-
              AL)(3N)SETS(3N)PARAMETER?
S12      1165   CAMERA?
S13         3   (REGION OR AREA)(3N)EXTRACT?
S14         0   AU=(ASANO, T? OR MATSUZAKI, H? OR FURUHASHI, Y? OR ASANO T?
              OR MATSUZAKI H? OR FURUHASHI Y?)
S15        38   (S1 OR S2) AND (S3 OR S4) AND S6 AND S8
S16        17   S15 AND S5
S17        12   S16 NOT PY=>2000
```

11/3,K/1
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00115130 DOCUMENT TYPE: Review

PRODUCT NAMES: Double-Take 3.0 (615196)

TITLE: Double-Take offers single-minded backup
AUTHOR: Hartje, Roger
SOURCE: PC Week, v16 n11 p96(1) Mar 15, 1999
ISSN: 0740-1604

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: B

REVISION DATE: 20020630

...Take 3.0 was impressive, with a drag-and-drop interface that allowed creation of **multiple** replication **sets** with disparate user-definable **parameters** . However, setup was more difficult, partly because administrators are granted powerful controls, including the ability...

11/3,K/2
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00070477 DOCUMENT TYPE: Review

PRODUCT NAMES: Ensign 5 (012508)

TITLE: Ensign 5
AUTHOR: Gramza, Daniel
SOURCE: Futures, v23 n11 p48(1) Oct 1994
ISSN: 0746-2468
HOMEPAGE: http://www.futuresmag.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 19970630

...and tools are shown as overlays on a chart, and each study can contain as **many** as 10 **parameter sets** . Ensign 5 is recommended as a low-priced, easy-to-use, flexible package for all...

13/3,K/1
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00124379 DOCUMENT TYPE: Review

PRODUCT NAMES: Data Quality (837377); Data Warehouses (834289)

TITLE: First analysis
AUTHOR: White, Colin
SOURCE: Intelligent Enterprise, v3 n9 p50(5) Jun 5, 2000
ISSN: 1524-3621
HOMEPAGE: http://www.intelligententerprise.com

RECORD TYPE: Review
REVIEW TYPE: Product Analysis
GRADE: Product Analysis, No Rating

REVISION DATE: 20010228

...be developed, then the required source data can be extracted and loaded into the staging **area** . If necessary, the **extracted** data can be cleaned and transformed and merged in the staging area. The final task...

13/3,K/2
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00111216 DOCUMENT TYPE: Review

PRODUCT NAMES: Data Warehouses (834289); Data Marts (838837)

TITLE: Data Mart Delivery Architecture
AUTHOR: Tiwary, Sanjay Tewary, Asim
SOURCE: Enterprise Systems Journal, v13 n8 p42(2) Aug 1998
ISSN: 1053-6566
HOMEPAGE: http://www.esj.com

RECORD TYPE: Review
REVIEW TYPE: Product Analysis
GRADE: Product Analysis, No Rating

REVISION DATE: 19990130

...building a data mart. System components include a mart cooker input staging layer, or an **area** where data warehouse **extracts** are first stored. Extracted data is not dimensional because the data warehouse is relational overall...

13/3,K/3
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00109433 DOCUMENT TYPE: Review

PRODUCT NAMES: Business Analyst 1.0 Windows 95 & NT (697478)

TITLE: Easy to use Business Analyst 1.0 mines customer data for trends

AUTHOR: Hollander, Geoffrey
SOURCE: InfoWorld, v20 n29 p106(1) Jul 20, 1998
ISSN: 0199-6649
HOMEPAGE: http://www.infoworld.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: B

REVISION DATE: 20000830

...analysis steps are easy with a wizard, and testers began testing by creating a Study **Area** ; the data **extracted** is restricted to the geographic boundaries of the Study **Area** . An **Extraction** Wizard provides various ways to choose just about any combination of demographic factors. ?

17/3,K/1
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00121776 DOCUMENT TYPE: Review

PRODUCT NAMES: Poser 4.0 (560332)

TITLE: Building Character With Poser 4.0
AUTHOR: Cates, Randy A
SOURCE: Videography, p86(3) Nov 1999
ISSN: 0363-1001
HOMEPAGE: http://www.videography.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 20010730

MetaCreations' Poser 4.0 gets excellent **marks** overall for features that enhance its status as a **3D** figure- **positioning** package. This release has a larger library of people, whose physical characteristics and ethnicity can...
...with morph targets. Clothing can be put on the figures and conformed to the parent **object** , so that clothing moves with the figures. The libraries of props and clothes are larger...

...unlimited number of lights with infinite illumination or spot lights; deformation, which has a more **graphical** approach for ease of use; Morph Targets, which allow users to change all types of...

DESCRIPTORS: **3D** **Graphics** ; Animation; Apple Macintosh; Digital Video; **Graphics** Tools; **Image** Processing; MacOS

17/3,K/2
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00121064 DOCUMENT TYPE: Review

PRODUCT NAMES: Canoma (765147)

TITLE: The Software Dimension: Add a 'D' to your 2D
AUTHOR: McElyea, Tim
SOURCE: DCC Magazine, p36(1) Nov/Dec 1999
ISSN: 1077-5862
HOMEPAGE: http://www.advanstar.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: B

REVISION DATE: 20001030

MetaCreations' Canoma, a truly innovative and remarkable **3D** modeling package, gets very good **marks** overall for its ability to create **3D** models from 2D **photos** , including digital **images** or scanned **photos** . Canoma 1.0 is not a full-functioned **3D** modeler, but is a very compelling

offering that allows the user to work with flat shapes and architectural structures, boxy **objects** , and mass models. It does not handle curved **objects** well and is not intended for extremely detailed projects with open, airy, or angular structures...

...to create more complicated shapes. When a few shapes have been placed in the first **photo** , the user can move on to the next **photo** , rotate the view to the new camera angle, and repeat the process for each source **image** . When geometry is **positioned** and pinned to the source **photos** , one click of the mouse pulls texture maps from the source **photos** and applies them to the model. Texture maps can be edited in a paint program...

DESCRIPTORS: **3D** **Graphics** ; **Graphics** Tools; **Image** Processing; Models ; **Photography**

17/3,K/3
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00120333 DOCUMENT TYPE: Review

PRODUCT NAMES: Houdini 3.0 (592111)

TITLE: Side Effects' Houdini Pulls a Rabbit Out of a Hat
AUTHOR: De Andrade, Paulo
SOURCE: DCC Magazine, v2 n8 p48(2) Sep/Oct 1999
ISSN: 1077-5862
HOMEPAGE: http://www.advanstar.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: B

REVISION DATE: 20010730

Side Effects' Houdini 3.0, a **3D** animation package, gets very good **marks** overall, especially for its ability to create effects that are too complex and elaborate for...

...and impeccably tune settings. Houdini is a full-functioned application that supports every type of **3D** animation, including special effects and character animation. An excellent NURBS modeler is provided, along with...

...animation and a full- featured built-in compositor that can be added at any network **location** . The latter includes the ability to create intricate composites to be used as material textures for **3D** **objects** . Just about any action can be altered, and elements in the sequence of events can...

...moved around, using all the parameters involved in the network. Users can easily replace old **graphic** models with new ones, and Houdini will automatically apply all the previous attributes. Houdini's...

DESCRIPTORS: **3D** **Graphics** ; Animation; Digital Video; **Graphics** Tools; **Image** Processing

17/3,K/4
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00119816 DOCUMENT TYPE: Review

PRODUCT NAMES: Jack Nicklaus 6: Golden Bear Challenge (773697)

TITLE: Still Golden: Activision Nabs Jack Niklaus Franchise and Sinks a...
AUTHOR: May, Scott A
SOURCE: Computer Gaming World, v181 p132(1) Aug 1999
ISSN: 0744-6667
HOMEPAGE: http://www.computergaming.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 20010930

...s Jack Nicklaus 6: Golden Bear Challenge, the latest in the golf series, gets excellent **marks** , especially for a dynamic new **graphics** engine, better ball physics and golfer animation, a built-in links designer, a savvy, well...
...difficult and time-consuming to learn, and much of the shot commentary is unnecessary. The **graphics** engine from Hypnos Entertainment makes views gorgeous, with changing skies, magnificent vistas, and richly detailed...

...Courses seem to flow, instead of having a cut-and-paste look with badly scaled **objects positioned** on flat backdrops (which are faults of most other golf simulations). Transition from front to back is transparent, and vertical depth illusion is astounding, even without using **3D** video hardware. The golfers are large, motion-captured characters, rendered with polygons and encased in...

...ball's flight model reacts realistically to topography and weather and is rendered to-the- **pixel** . The full-blown course and hole designer allows the gamer to import and convert any...

17/3,K/5
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00113196 DOCUMENT TYPE: Review

PRODUCT NAMES: character studio Windows 9x & NT (633666)

TITLE: Bipeds in Motion
AUTHOR: Duberman, David
SOURCE: InterActivity Magazine, v4 n11 p49(2) Nov 1998
ISSN: 1077-8047
HOMEPAGE: http://www.interactivity@mfi.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 20020227

Autodesk's greatly improved and highly recommended Kinetix Character Studio for **3D** Studio MAX 2 allows **3D** animators to put bipeds in motion by adding a biped **object** to the main work area. Two modules are provided:

Biped, an **object** modeling plug-in for creating and animating two-legged characters; and Physique, a modifier that allows animation of a substructure, such as a biped, to be linked to rendering **objects** , such as polygon meshes. This toolset is another step toward full automation of tasks required...

...in the neck, spine, legs, optional tail and ponytails, number of fingers and toes, and **location** of ankle attachment to feet. The user then works in the Motion panel to skillfully...

...which can be imported from other applications or captured from live people in BioVision and **marker** formats.

DESCRIPTORS: Animation; **Graphics** Tools; IBM PC & Compatibles; **Image** Processing; Models; Motion Capture; Windows; Windows NT/2000

17/3,K/6
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00108265 DOCUMENT TYPE: Review

PRODUCT NAMES: Bryce 3D **PowerMac & Windows (529427**

TITLE: Metacreations' Bryce 3D
AUTHOR: Elia, Eric
SOURCE: NewMedia, v8 n4 p32(1) Mar 24, 1998
ISSN: 1060-7188
HOMEPAGE: http://www.newmedia.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 20001030

PRODUCT NAMES: Bryce 3D **PowerMac & Windows...**

TITLE: Metacreations' Bryce 3D

MetaCreations' Bryce **3D** has many of the **3D** landscape modeling and rendering features requested by users. It is still able to allow any user to generate professional quality **3D** output. It is still an excellent tool for creative hobbyists, and its animation and new set of features also make it a professional tool. Bryce **3D** looks very similar to Bryce 2, but sports a timeline at the bottom of the...

...window. The interface is still offbeat, with icons for creating mountains, seas, terrain, and primitive **3D** shapes. An Edit window maneuvers the elements, and a Sky & Fog window is also available. Everything in Bryce **3D** is easily animated, such as **objects** in a scene, light sources, clouds, the camera, and the materials and textures that create...

...Motion Lab, which provides total control over the different elements of change over time, including **position** , rotation, and **location** . More visual feedback is needed in the Motion Lab Sequencer, including the ability to label or color-code keyframe **markers** . Single-frame rendering times are adequate, but even short animations are painfully slow to process

...

...can fill shapes, and the shapes can be animated over time or flown through an **object** .

DESCRIPTORS: **3D Graphics** ; Animation; Draw; **Graphics** Tools; IBM PC & Compatibles; **Image** Processing; Models; Paint; PowerMac; Windows

17/3,K/7
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00102781 DOCUMENT TYPE: Review

PRODUCT NAMES: Infini-D 3.5 Windows (303071)

TITLE: Infini-D 3.5
AUTHOR: McElyea, Tim
SOURCE: PC Graphics & Video, v6 n4 p64(3) Apr 1997
ISSN: 1060-5282

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 20010730

...D 3.5 rendering software for the Wintel PC is reviewed, and gets very good **marks** overall as a powerful, useful program and a good value. Palettes for tools, lights, **objects** , animation, views, and other functions are provided; the program's design adheres to Windows standards ...
...D provides primitives and text-generation tools, and the latter are top-notch. More complicated **objects** , including extruded, revolved, and Boolean **objects** , are **positioned** in the scene and edited in the Workshop module. Common **objects** can be **positioned** in the scene with one click. Workshops are user-friendly and provide multiple options and drawing tools. During testing, many elaborate **objects** were easy to create, and DXF input operated perfectly in all tests. Camera and lighting...

DESCRIPTORS: **3D Graphics** ; Animation; Digital Video; Draw; **Graphics** Tools; IBM PC & Compatibles; **Image** Processing; Windows

17/3,K/8
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00100246 DOCUMENT TYPE: Review

PRODUCT NAMES: PhotoModeler Pro (514357); 3D **Builder Pro (745235**

TITLE: Picture **-Perfect Models**
AUTHOR: King, Doug
SOURCE: Computer Graphics World, v20 n1 p39(4) Jan 1997
ISSN: 0271-4159
HOMEPAGE: http://www.cgw.com

RECORD TYPE: Review

REVIEW TYPE: Product Analysis
GRADE: Product Analysis, No Rating

REVISION DATE: 20000930

...**PRODUCT NAMES: 514357);** 3D **Builder Pro**...

TITLE: Picture **-Perfect Models**

Eos Systems' PhotoModeler, **3D** Construction's **3D** Builder, Synthonics' Wireframe, and 3rd Dimension Technologies' **3D** Express are **photo** -to-model programs, or products that create precise **3D** models from **photographs** . Various commercial products use photogrammetric algorithms to accurately determine the **position** of a camera and 'look directions' based on 2D **photos** . When the **locations** are known, a computer model can be built by mathematically triangulating **object** points that can be viewed in two or more different **photos** . The tools work best for modeling of **objects** with sharp visual features, including **3D** edges or flat **markings** 'painted' on surfaces. Photogrammetry is especially helpful for rebuilding actual **objects** ; this makes it useful for site surveying, medical reconstruction, forensic studies, engineering, and architectural applications...

...display is required. A digital camera is recommended. Users begin by obtaining at least three **photos** of the **location** or **object** to be reconstructed. Topics discussed include **image** file formats needed and supported; creating a model; **marking** the **photo** with points; creating a wireframe mesh; applying textures from the **photo** to the **3D** model; and problems that may be encountered.

...COMPANY NAME: 586161); **3D** Construction Co...
DESCRIPTORS: CAD Utilities; CAE; Digitizing; **Graphics** for Science & Engineering; IBM PC & Compatibles; Models; Windows; Windows NT/2000

17/3,K/9
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00096718 DOCUMENT TYPE: Review

PRODUCT NAMES: 3D **World 2.0 Macintosh (603139**

TITLE: Microspot 3D **World 2.0 still in a limited place**
AUTHOR: Hauer, David
SOURCE: MacWEEK, v10 n41 p42(2) Oct 28, 1996
ISSN: 0892-8118
HOMEPAGE: http://www.macweek.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: C

REVISION DATE: 20020227

PRODUCT NAMES: 3D **World 2.0 Macintosh**...

TITLE: Microspot 3D **World 2.0 still in a limited place**

Microspot USA's **3D** World 2.0, a minimalist **3D** modeling and rendering

package for the Macintosh, is an interesting but flawed release, although it has many enhancements. It gets lower than average **marks** , particularly due to its incomplete modeling tools; lack of ray tracing, environment mapping, anti-aliasing, or procedural textures; a weak animation module; and the need for a QuickDraw **3D** accelerator card to do Boolean subtractions for transparency and Booleans. Most of its new features are plug-ins, including the Animation Tweener palette, which allows **Object** and Camera Tween points to automate tweening. The Textures window allows **positioning** of **image** maps, including QuickTime movies; users can change their orientation and scale and tile without any...

...that specify mapping topology are missing, as are bump and glow maps. A badly needed **3D** Text tool is added, but it lacks bevels and typographic controls. The Gears plug-in...

DESCRIPTORS: **3D** **Graphics** ; Animation; Apple Macintosh; **Graphics** Tools ; **Image** Processing; MacOS; Models

17/3,K/10

00095073 DOCUMENT TYPE: Review

PRODUCT NAMES: Bryce 3D **2 Macintosh (529427**

TITLE: Bryce 2
AUTHOR: Long, Ben
SOURCE: MacUser, v12 n9 p47(1) Sep 1996
ISSN: 0884-0997
HOMEPAGE: http://www.zdnet.com/macuser

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 20001130

PRODUCT NAMES: Bryce 3D **2 Macintosh...**

...2 for the Macintosh, a powerful, versatile landscape generator for Macintosh users, gets very good **marks** overall, especially for its new interface; the new PICT **Object** primitive, which allows users to import 2D PICT **images** for **positioning** in scenes; and the new Terrain Editor, which allows users to paint 2D gray-scale **images** in a window and see a continuous updated thumbnail of the extruded shape. **3D** models are now imported in the DXF format, allowing users to **position** **objects** created in other programs in scenes. All **objects** can be easily rotated or scaled easily, and new tools ensure easy alignment of **objects** ' edges or centers along any axis; users can also scatter **objects** randomly in a scene. Four new types of lights, Radial, Spotlight, Square spotlight, and parallel...

DESCRIPTORS: **3D** **Graphics** ; Apple Macintosh; Draw; **Graphics** Tools; **Image** Processing; MacOS; Models; Paint

17/3,K/11

00094169 DOCUMENT TYPE: Review

PRODUCT NAMES: TextureScape 2.0 (510751)

TITLE: Specular TextureScape 2.0
AUTHOR: Moody, Nathan Biedny, David
SOURCE: MacUser, v12 n8 p59(1) Aug 1996
ISSN: 0884-0997
HOMEPAGE: http://www.zdnet.com/macuser

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

REVISION DATE: 20010430

Specular International's TextureScape 2.0, a Macintosh tool for creating tilable textures for backgrounds, **3D objects** , and animations, gets excellent **marks** overall. It allows users much more control over texture creation and is the best tool...
...can work faster because they need not toggle between TextureScape and a drawing program. EPS **graphics** created in Adobe Illustrator or Macromedia's FreeHand can be imported into TextureScape's Shapes...

...99 patterns. Users can blend layers and drag-and-drop an entire layer to reposition **placement** atop or beneath other layers in a texture.

DESCRIPTORS: Apple Macintosh; Draw; **Graphics** Tools; **Image** Processing; MacOS

17/3,K/12
DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.

00093197 DOCUMENT TYPE: Review

PRODUCT NAMES: Virtus 3-D WebSite Builder (619639)

TITLE: 3-D Web-Spinning for Mere Mortals
AUTHOR: Ginsburg, Lynn
SOURCE: Windows Magazine, v7 n10 p152(1) Oct 1996
ISSN: 1060-1066
HOMEPAGE: http://www.winmag.com

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: B

REVISION DATE: 20000730

Virtus's 3-D WebSite Builder is a recommended tool that allows users to create **3D** Virtual Reality Modeling Language (VRML) worlds that can be published on the World Wide Web. The tool gets very good **marks** for its huge, predesigned **3D** clip collection and unusually good navigation tools. The Web site can become a **3D** container with a navigable interior and exterior. Although users cannot create completely new **3D objects** , they can create unique ones by combining provided primitive **objects** into more elaborate shapes. Predesigned **3D** galleries of **objects** include those for

basic 2D and **3D** primitives, complex scenes with daedal **3D** architecture, and everything in between. A variety of drag-and-drop design libraries are provided so that users can easily drag-and-drop predesigned **objects** into **position** to create a **3D** scene. During tests, the user quickly created a **3D** living room **scene** with furniture. **3** -D WebSite Builder is not recommended for novices.

DESCRIPTORS: **3D** **Graphics** ; Authoring Systems; Electronic Publishing; **Graphics** Tools; IBM PC & Compatibles; Internet Utilities; Virtual Reality; VRML; Web Site Design; Windows

?

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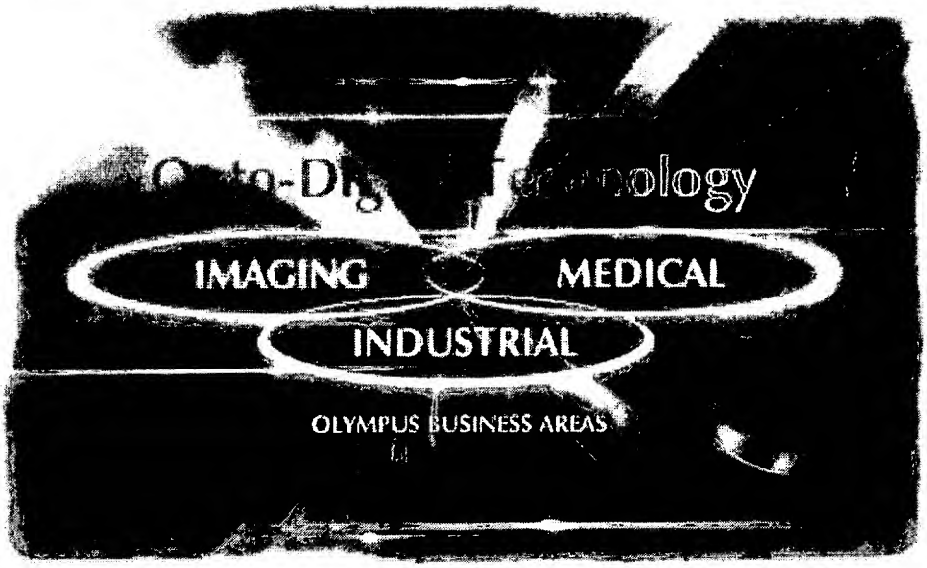

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We have challenged frontiers with our advancing technologies in the area of "optoelectronics" and "optomechatronics" comprising the fields of optics, electronics and precision engineering.

Please click the upper menu to access the further information.

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1 SURGICAL IMAGING-SUPPORT SYSTEM PROTOTYPE Update: 20020823
(http://www.olympus.co.jp/Special/OTF80/snssE.html)

Profile | LineUp | Special | What's New | HomePage SURGICAL IMAGING-SUPPORT SYSTEM PROTOTYPE Olympus R&D will ease the surgeon's task by bringing a high-precision simulation and navigation technologies to the microsurgery operating

1-1 of 1

KEYWORD Search

Advanced search
New search

Profile | LineUp | Special | What's New | HomePage

SURGICAL IMAGING-SUPPORT SYSTEM PROTOTYPE

Olympus R&D will ease the surgeon's task by bringing a high-precision simulation and navigation technologies to the microsurgery operating room

---

Olympus Optical Co., Ltd. is pleased to announce a prototype of its surgical imaging-support system. The project integrates a number of advanced technologies to create a groundbreaking surgical simulation/navigation system.
The Olympus research is part of the Information Promotion Agency's R&D effort to bring digitization to medical systems.

TAKING THE SURGEON'S POINT OF VIEW

The surgical imaging-support system will make an indispensable contribution to neurosurgery - an area that holds immense potential for minimally invasive techniques that can improve the patient's quality of life.
Microsurgery and endoscopic procedures have already spread rapidly in the field because they minimize the impact on the patient. But these advantages have been offset by extremely sophisticated and complicated techniques that are far more challenging for the surgeon. The solution lies in an effective imaging-support system to prepare medical professionals, refine their techniques and guide them during surgery. Olympus has responded to these needs by developing a prototype that integrates advanced technologies for surgical simulation and navigation.

AN EYE FOR MEDICAL PROGRESS

The Surgical imaging-support system has three independent functions for surgical planning, simulation and navigation.

Surgical Planning (Minimally Invasive Penetration Path)
A 3-D image of the patient lays the basis for planning an operation by displaying the minimally invasive penetration path.
First, stratified two-dimensional images of the patient - from an X-ray, CT or MRI system - are read from the server. Then a 3-D image of the patient is compiled and compared to data in a standard cerebral atlas showing a 3-D intraparenchymal image with key cerebral blood vessels marked and labeled for easy identification. These indicators are crucial to preventing damage that could lead to impairment or even death. Finally, a composite 3-D image of the patient is produced to display optimal access to the target area - the path that will minimize the impact.

Surgical Simulation (3-D Image Layering)
A surgeon can prepare for an operation by using the patient's 3-D image generated during the planning stage. Surgical procedures are simulated with a parallel-link master manipulator - an original Olympus innovation - on the graphical interface of a PC. Serving as an input device, the master manipulator not only has a handle shaped like a surgical instrument, but responds with force-feedback.
Surgeon training programs will also take advantage of these simulation capabilities since they are backed by digital recording, playback and editing for analysis and study.

Surgical Navigation
Creating an effective visual aid for actual surgery starts with input of the patient's 3-D image from the planning stage. Then it is layered with high-resolution endoscope and microscope images showing the affected portion. This synthesis is so accurate that the surgeon can pinpoint the exact location and angle of the target area. Position and motion sensing technologies, including advanced optical and video tracking systems, are the key to the exceptionally high resolution required for image layering. The surgical imaging-support system has been developed for use with an ordinary PC. The monitor shows the layered image of target area as well as a global display - which can be controlled by voice commands - of sagittal, axial and coronal cross-sections. Inset windows on the monitor show the observation direction and angle of the microscope.

For further information or any comments, please contact
pr_dept@olympus.co.jp

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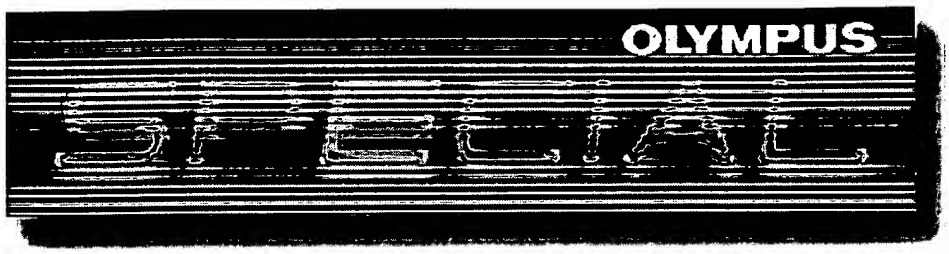

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Probing the Depths by Underwater Photographer

Latest Opto-Digital Technology by Olympus

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Olympus Commences MEMS Foundry Services
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E-Document Safekeeping System Prototype
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         ECRI (A nonprofit agency)
File 198:Health Devices Alerts(R) 1977-2003/Feb W1
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Set     Items   Description
S1     647393   IMAGE? OR PICTURE? OR GRAPHIC? OR PHOTOS OR PHOTOGRAPH?? OR
              PHOTO
S2      13195   PIXEL? OR PEL OR PICTURE()ELEMENT? OR PICEL?? OR PIXCEL??
S3      34119   3D
S4     197195   (THREE OR THIRD OR 3)(3N)(DIMENSION? OR SHAPE? OR MODEL? OR
              REPRESENTATION? OR SCENE?)
S5      90115   OBJECT??
S6    1026404   POSITION? OR PLACEMENT? OR LOCATION?
S7       2109   POSTURE? AND ORIENTATION?
S8     664047   (MARKER? OR MARKS OR MARKING?)
S9        499   (SENSING OR SENSE OR DETECT? OR DETERMIN? OR ANALY? OR EST-
             IMAT? OR CALCULAT?) AND S6 AND S7
S10     70221   S1 AND (REDUC? OR SHRINK? OR COMPRESS?)
S11       136   (PLURAL? OR MANY OR NUMEROUS OR MULTI OR MULTIPLE OR SEVER-
             AL)(3N)SETS(3N)PARAMETER?
S12     41347   CAMERA?
S13      1732   (REGION OR AREA)(3N)EXTRACT?
S14      4451   AU=(ASANO, T? OR MATSUZAKI, H? OR FURUHASHI, Y? OR ASANO T?
              OR MATSUZAKI H? OR FURUHASHI Y?)
S15      1254   (S1 OR S2) AND (S3 OR S4) AND S8
S16         2   S15 AND S9
S17         2   RD S16 (unique items)
S18         0   S15 AND S13
S19         0   S15 AND S11
S20         0   S15 AND S14
S21        10   S15 AND (REGION OR AREA) AND EXTRACT?
S22        10   S21 NOT S16
S23         5   S22 NOT PY=>2000
S24         3   RD S23 (unique items)
S25       131   S1 AND S14
S26         5   S25 AND (S6 OR S7)
S27         5   S26 NOT (S16 OR S21)
S28         4   RD S27 (unique items)
S29       159   S15 AND (REDUC? OR SHRINK? OR COMPRESS?)
S30         0   S29 AND EXTRACT?
S31        13   S29 AND SETS
S32        13   S31 NOT (S26 OR S16 OR S21)
S33         6   RD S32 (unique items)
S34       711   OLYMPUS()OPTICAL
S35       480   CO='OLYMPUS OPITCAL CO., LTD.':CO='OLYMPUS OPTICAL CO., TO-
             KYO, JAPAN'
S36        21   CO='OLYMPUS OPTICAL CO, LTD.':CO='OLYMPUS OTPICAL CO., LTD-
             .'
S37       713   S34:S36
S38         0   S37 AND S15
S39        94   S37 AND S1
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S40	8	S39 AND (S3 OR S4)
S41	6	S40 NOT (S31 OR S26 OR S16 OR S21)
S42	6	RD S41 (unique items)

17/3,K/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10041427 99019060 PMID: 9802252
When is a lifting movement too asymmetric to identify low-back loading by 2-D analysis ?
Kingma I; de Looze M P; van Dieen J H; Toussaint H M; Adams M A; Baten C T
Amsterdam Spine Unit, Faculty of Human Movement Sciences, Vrije Universiteit, The Netherlands.
Ergonomics (ENGLAND) Oct 1998, 41 (10) p1453-61, ISSN 0014-0139 Journal Code: 0373220
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

When is a lifting movement too asymmetric to identify low-back loading by 2-D analysis ?
... lifting movements are asymmetric, errors of unknown size may be introduced in a 2-D **analysis** . In the current study, an **estimation** of these errors was made by comparing the outcome of a 2-D **analysis** to the results of a recently developed and validated **3** -D **model** . Four subjects made two repetitions of five lifting movements, differing in the amount of asymmetry...

... a significant underestimation of the peak torque by 20, 36 and 61% when the initial **position** of a box was rotated 30, 60 and 90 degrees with respect to the sagittal...

... of this underestimation was a pelvic twist, resulting in an erroneous projection of a pelvic **marker** on to the sagittal plane due to pelvic twist. It is suggested that from 30 degrees box rotation a 2-D **analysis** may easily lead to wrong conclusions when it is used to study asymmetric lifting.
Descriptors: **Image** Processing, Computer-Assisted; *Lifting; *Lumbar Vertebrae--physiology--PH; *Sacrum--physiology--PH; *Video Recording; *Weight-Bearing...
; Adult; Biomechanics; Intervertebral Disk--physiology--PH; **Orientation** --physiology--PH; **Posture** --physiology--PH

17/3,K/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

09256341 97162451 PMID: 9009427
Combined effects of errors in frontal-view asymmetry diagnosis.
Pirttiniemi P; Miettinen J; Kantomaa T
University of Oulu, Finland.
European journal of orthodontics (ENGLAND) Dec 1996, 18 (6) p629-36, ISSN 0141-5387 Journal Code: 7909010
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

The aim of the present investigation was to **determine** the relative extent of geometric error and errors in point identification in

postero-anterior roentgenography...

... roentgenographs, first using the dry skulls as such, and then the same skulls with metal **markers** inserted to show the exact **locations** of the cephalometric points. Consistency and normal variation in the reproducibility of head **position** in the cephalostat between repeated roentgenographs were studied by a **photographic** technique in a group of young healthy adults, measuring the extent of minor head movements. Geometric error was **calculated** using a computer-aided design program (CAD) by rotating the **three** - **dimensional** co-ordinates of the cephalometric landmarks and thus obtaining projection error in the frontal view. Accuracy in cephalometric point identification was best in dental landmarks and vertical **orientation** of superior orbital margins. Geometric error was least when landmarks near the anterior midsagittal plane...

... other. Width measurements from frontal-view cephalograms are most sensitive to minor movements in head **posture** . Due to combined errors, the use of width measurements in facial asymmetry diagnosis should not...

... since variance in errors in landmark identification can be larger than that in actual landmark **location** .
...; and histology--AH; Mandible--radiography--RA; Maxilla--radiography --RA; Movement; Observer Variation; Orbit--radiography--RA; **Photography** ; **Posture** ; Prostheses and Implants; Reproducibility of Results; Rotation; Tooth--radiography--RA; Vertical Dimension
?

24/3,K/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

06619767 BIOSIS NO.: 000087061929
NEW HIGH-RESOLUTION 2 DEOXYGLUCOSE METHOD FEATURING DOUBLE LABELING AND AUTOMATED DATA COLLECTION
AUTHOR: MCCASLAND J S; WOOLSEY T A
AUTHOR ADDRESS: JAMES L. O'LEARY DIV. EXP. NEUROL. NEUROSURG., DEP. NEUROL. NEUROSURG., WASHINGTON UNIV. SCH. MED., ST. LOUIS, MO. 63110.
JOURNAL: J COMP NEUROL 278 (4). 1988. 543-554. 1988
FULL JOURNAL NAME: Journal of Comparative Neurology
CODEN: JCNEA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

...ABSTRACT: emulsion-autoradiography which combines improved retention of 2DG labelling, staining with immunohistochemical and other specific **markers** , and automated data collection and analysis of local silver grain and stain densities is described...

...many other neuroanatomical techniques. We demonstrate 2DG emulsion autoradiography combined with cytochrome oxidase (CO) histochemistry, **markers** for axonal pathway tracing, plastic embedding for semithin sections, and immunohistochemical staining for glutamate decarboxylase...
...To collect the data directly from microscope slides, a computer-controlled microscope was integrated with **image** -processing software to eliminate the need for manual counting and scoring of autoradiograms. Regions of...

...for direct comparison with silver grain density. The method is extremely flexible, especially since new **image** -processing strategies can be developed in software to **extract** the desired information from materials labelled by other methods (e.g., HRP). The combination of experimental and data collection strategies generates two- or **three - dimensional** "maps" of 2DG labelling, histochemical stain, etc., over a brain **area** of interest and allows direct comparison of these different maps. To our knowledge this is...
DESCRIPTORS: MOUSE GLYCOGEN COMPUTER MICROSCOPE **IMAGE** PROCESSING NEUROANATOMICAL TECHNIQUE

24/3,K/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

05568184 BIOSIS NO.: 000083041324
THREE - DIMENSIONAL **RECONSTRUCTION OF MEDIAN EMINENCE MICROVASCULAR MODULES**
AUTHOR: HIBBARD L E; DOVEY-HARTMAN B J; PAGE R B
AUTHOR ADDRESS: DEPARTMENT OF RADIOLOGY, DIVISION OF NEUROSURGERY, THE PENNSYLVANIA STATE UNIVERSITY, COLLEGE OF MEDICINE, HERSHEY, PENNSYLVANIA, PA. 17033, USA.
JOURNAL: COMPUT BIOL MED 16 (6). 1986. 411-422. 1986
FULL JOURNAL NAME: Computers in Biology and Medicine
CODEN: CBMDA
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

THREE - DIMENSIONAL **RECONSTRUCTION OF MEDIAN EMINENCE MICROVASCULAR**

MODULES

...ABSTRACT: transmission electron micrographs of thin serial sections of the median eminence. The complexity of these **images** and the anticipated need to include large numbers of them in the study led us to consider computer reconstruction for this problem. We report here the successful **three - dimensional** reconstruction of capillary modules using digital **image** processing techniques for capillary feature detection **extraction** , for construction of montages (mosaics) of overlapping **images** of the same section, and for automatic **image** registration by two independent methods without the use of fiducial **marks** . These tasks have been performed manually in nearly all the published neurobiological reconstruction; here they are performed by programs using only the mathematical properties of the **images** . Methods like those described here provide the only practical means for executing large scale reconstruction and gaining significant new information about the regulation of blood flow in this **region** of the brain.
DESCRIPTORS: HUMAN HORMONAL COMMUNICATION REGULATORY ROLE COMPUTER RECONSTRUCTION DIGITAL **IMAGE** PROCESSING NEUROBIOLOGICAL RECONSTRUCTION

24/3,K/3 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

07209198 92146309 PMID: 1782896
An in vitro comparison of root canal content extrusion using ultrasonic and hand instrumentation.
Lee S J; Lee C S; Strittmatter E J
Department of Conservative Dentistry, Yonsei University, Seoul, Korea.
Endodontics & dental traumatology (DENMARK) Apr 1991, 7 (2) p65-8, ISSN 0109-2502 Journal Code: 8508054
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

...1 x 1 x 2 cm) with white dental plaster so that the coronal 2- 3 mm of the **model** was exposed for instrumentation. Methylene blue dye with glycerin was used as a **marker** for root canal content. The study consisted of three groups. In group I, Enac ultrasonic...

... push-pull instrumentation technique, 1 mm from the apex. After instrumentation the resin models were **extracted** and the plaster blocks were sectioned through the long axis of the models. **Photographs** were made of the **area** of apical leakage and the amount of dye penetration was measured using a planimeter. There...
?

28/3,K/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13991605 BIOSIS NO.: 200200620426
Navigation apparatus and surgical operation image acquisition/display apparatus using the same.
AUTHOR: Saito Akito(a); Shibasaki Takao; **Asano Takeo ; Matsuzaki Hiroshi ; Furuhashi Yukihito** ; Kosaka Akio
AUTHOR ADDRESS: (a)Hino**Japan
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1263 (3):pNo Pagination Oct. 15, 2002
MEDIUM: e-file
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

Navigation apparatus and surgical operation image acquisition/display apparatus using the same.
...AUTHOR: **Asano Takeo** ...

... **Matsuzaki Hiroshi** ...

... **Furuhashi Yukihito**

...ABSTRACT: information generating section and a display section. The navigation-related information generating section measures the **position** and orientation of an object and a target in a three-dimensional space and generate...

...related information generating section in any of different modes depending on the relationship of the **position** and orientation of the object and that of the target. A surgical operation **image** acquisition/display apparatus comprises an observation section, an **image** display section and a specifying section. The observation section includes a plurality of observation sections whose **position** and orientation is modifiable. The **image** display section is adapted to alternatively display any of the **images** obtained by the observation sections or synthetically combine and display the combined **images** . The specifying section specifies the **image** to be displayed to the **image** display section according to the **position** and orientation of the observation section.
...METHODS & EQUIPMENT: surgical operation **image** acquisition-display apparatus...

28/3,K/2 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

07905223 EMBASE No: 1999378812
Alterations of temperature in the external auditory meatus and in the face during exercise preparation
Matsuzaki H. ; Mizote M.
H. Matsuzaki, Teikyo Heisei Univ. Computer College, Chiba Japan
Japanese Journal of Medical Electronics and Biological Engineering (JPN. J. MED. ELECTRON. BIOL. ENG.) (Japan) 1999, 37/3 (277-284)
CODEN: IYSEA ISSN: 0021-3292
DOCUMENT TYPE: Journal; Article

LANGUAGE: JAPANESE SUMMARY LANGUAGE: ENGLISH; JAPANESE
NUMBER OF REFERENCES: 15

Matsuzaki H. ; Mizote M.

...muscle dynamometer as quickly and powerfully as possible and maintained it at the most powerful **position** for 10 s. The subjects were instructed to keep their eyes closed during the exercise...

...camera with an IR-optical fiber. Facial temperature was measured by an IR-camera. Thermal **images** were recorded every 0.1 s with a real time recorder. EEG at Finf 7...
...in the EEG frequency was calculated every 0.1 s. While a subject determined a **position** of feet and stance for an exercise, EAM temperature and facial temperature of the forehead...

28/3,K/3 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

06764084 EMBASE No: 1997045576
Relationship between duodenogastric reflux and atrophic changes in the gastric mucosa
Urita Y.; Kurita T.; Nakatani N.; Katayama M.; Kondo E.; **Matsuzaki H.** ; Iida K.; Nishino M.; Naruki Y.; Otsuka S.; Hashimoto Y.; Yamazaki K.
Y. Urita, 1st Department of Internal Medicine, Toho University School of Medicine, 6-11-1 Omori-nishi, Ota-ku, Tokyo 143 Japan
Japanese Journal of Medical Ultrasonics (JPN. J. MED. ULTRASON.) (Japan) 1996, 23/11 (15-22)
CODEN: CHIGD ISSN: 0287-0592
DOCUMENT TYPE: Journal; Article
LANGUAGE: JAPANESE SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 31

Urita Y.; Kurita T.; Nakatani N.; Katayama M.; Kondo E.; **Matsuzaki H.** ; Iida K.; Nishino M.; Naruki Y.; Otsuka S.; Hashimoto Y.; Yamazaki K.

...1) and 2 (PG 2). Atrophic change in the gastric mucosa was evaluated by the **position** of the functional atrophic border (C-1, C-2, O-1, O-2, O-3...
MEDICAL DESCRIPTORS:
article; color ultrasound flowmetry; histopathology; human; **image** analysis; intestine metaplasia--diagnosis--di; major clinical study; stomach mucosa injury--diagnosis--di

28/3,K/4 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

10796845 20318075 PMID: 10977519
Navigation system for neurosurgery with PC platform.
Akatsuka Y; Shibasaki T; Saito A; Kosaka A; **Matsuzaki H** ; **Asano T** ; **Furuhashi Y**
Olympus Optical Co., Ltd., Advanced Technology Research Center, Tokyo, Japan. y akatsuka@ot.olympus.co.jp
Studies in health technology and informatics (NETHERLANDS) 2000, 70 p10-6, ISSN 0926-9630 Journal Code: 9214582
Document type: Journal Article

Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

Akatsuka Y; Shibasaki T; Saito A; Kosaka A; **Matsuzaki H** ; **Asano T** ; **Furuhashi Y**

... target tumor and other significant anatomical landmarks are superimposed in real-time onto live video **images** taken from the microscope and the endoscope. The wireframe model is generated from a CT/MRI slice **images** . Overlaid **images** are simultaneously displayed in the same monitor using the **picture** -in- **picture** function so that the surgeon can concentrate on the single monitor during the surgery. The system measures the **position** and orientation of the patient using specially designed non-contact sensing devices mounted on the...

Descriptors: **Image** Processing, Computer-Assisted--instrumentation--IS; *Microcomputers; *Neurosurgery--instrumentation--IS; *Stereotaxic Techniques--instrumentation--IS; *User-Computer...
?

33/3,K/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13860094 BIOSIS NO.: 200200488915
Three - dimensional **intrafractional movement of prostate measured during real-time tumor-tracking radiotherapy in supine and prone treatment positions.**
AUTHOR: Kitamura Kei(a); Shirato Hiroki; Seppenwoolde Yvette; Onimaru Rikiya; Oda Makoto; Fujita Katsuhisa; Shimizu Shinichi; Shinohara Nobuo; Harabayashi Toru; Miyasaka Kazuo
AUTHOR ADDRESS: (a)Department of Radiology, Hokkaido University School of Medicine, North-15 West-7, Kita-ku, Sapporo, 060-8638**Japan E-Mail: ktmr@radi.med.hokudai.ac.jp
JOURNAL: International Journal of Radiation Oncology Biology Physics 53 (5):p1117-1123 August 1, 2002
MEDIUM: print
ISSN: 0360-3016
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

Three - dimensional **intrafractional movement of prostate measured during real-time tumor-tracking radiotherapy in supine and prone...**

ABSTRACT: Purpose: To quantify **three - dimensional** (**3D**) movement of the prostate gland with the patient in the supine and prone positions and...

...and Materials: The real-time tumor-tracking radiotherapy (RTRT) system was developed to identify the **3D** position of a 2-mm gold **marker** implanted in the prostate 30 times/s using two **sets** of fluoroscopic **images** . The linear accelerator was triggered to irradiate the tumor only when the gold **marker** was located within the region of the planned coordinates relative to the isocenter. Ten patients...

...cancer treated with RTRT were the subjects of this study. The coordinates of the gold **marker** were recorded every 0.033 s during RTRT in the supine treatment position for 2 min. The patient was then moved to the prone position, and the **marker** was tracked for 2 min to acquire data regarding movement in this position. Measurements were taken 5 times for each patient (once a week); a total of 50 **sets** for the 10 patients was analyzed. The raw data from the RTRT system were filtered to **reduce** system noise, and the amplitude of movement was then calculated. The discrete Fourier transform of...

...prostate movement. Results: No apparent difference in movement was found among individuals. The amplitude of **3D** movement was 0.1-2.7 mm in the supine and 0.4-24 mm...

...in the prone position in the treatment of prostate cancer. RTRT would be useful in **reducing** uncertainty due to the effects of the respiratory cycle, especially in the prone position.
MISCELLANEOUS TERMS: ... **three - dimensional** intrafractional movement

33/3,K/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13538440 BIOSIS NO.: 200200167261

The impact of 18FDG-PET on target and critical organs in CT-based treatment planning of patients with poorly defined non-small-cell lung carcinoma: A prospective study.

AUTHOR: Mah Katherine(a); Caldwell Curtis B; Ung Yee C; Danjoux Cyril E; Balogh Judith M; Ganguli S Nimu; Ehrlich Lisa E; Tirona Romeo
AUTHOR ADDRESS: (a)Department of Medical Physics, Toronto-Sunnybrook Regional Cancer Centre, 2075 Bayview Avenue, Toronto, ON, M4N 3M5**Canada E-Mail: kathy.mah@tsrcc.on.ca

JOURNAL: International Journal of Radiation Oncology Biology Physics 52 (2):p339-350 February 1, 2002
MEDIUM: print
ISSN: 0360-3016
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

...ABSTRACT: the impact of coregistering 18F-fluoro-deoxy-2-glucose hybrid positron emission tomographic (FDG-PET) **images** with CT **images** on the planning target volume (PTV), target coverage, and critical organ dose in radiation therapy...
...both FDG-PET and CT simulation procedures on the same day, in radiation treatment position. **Image sets** were coregistered using external fiducial **markers** . Three radiation oncologists independently defined the gross tumor volumes, using first CT data alone and...

...The effect of FDG-PET on target definition varied with the physician, leading to a **reduction** in PTV in 24-70% of cases and an increase in 30-76% of cases...

...ranged from 0.40 to 1.86. On average, FDG-PET information led to a **reduction** in spinal-cord dose but not in total lung dose, although large differences in dose...

...were seen for a few individuals. Conclusion: The coregistration of planning CT and FDG-PET **images** made significant alterations to patient management and to the PTV. Ultimately, changes to the PTV...

...PET data be integrated into treatment planning of non-small-cell lung carcinoma, particularly for **three - dimensional** conformal techniques. ...METHODS & EQUIPMENT: **three - dimensional** conformal techniques MISCELLANEOUS TERMS: ...external fiducial **marker** ;

33/3,K/3 (Item 3 from file: 5)

12835687 BIOSIS NO.: 200100042836

Use of an implanted marker **and real-time tracking of the** marker **for the positioning of prostate and bladder cancers.**

AUTHOR: Shimizu Shinichi; Shirato Hiroki(a); Kitamura Kei; Shinohara Nobuo; Harabayashi Touru; Tsukamoto Taiji; Koyanagi Tomohiko; Miyasaka Kazuo
AUTHOR ADDRESS: (a)Department of Radiology, Hokkaido University School of Medicine, North-15 West-7, Kita-ku, Sapporo: hshirato@radi.med.hokudai.ac.jp**Japan

JOURNAL: International Journal of Radiation Oncology Biology Physics 48 (5):p1591-1597 December 1, 2000
MEDIUM: print
ISSN: 0360-3016
DOCUMENT TYPE: Article

RECORD TYPE: Abstract
LANGUAGE: English
SUMMARY LANGUAGE: English

Use of an implanted marker **and real-time tracking of the** marker **for the positioning of prostate and bladder cancers.**

...ABSTRACT: time tracking radiation therapy (RTRT) system consists of implantation of a 2.0-mm gold **marker** into a clinical target volume (CTV), **three - dimensional** radiation treatment planning (3DRTP) system, and the use of two **sets** of diagnostic x-ray television systems in the linear accelerator room, **image** processing units, and an **image** display unit. The position of the patient can be corrected by adjusting the actual **marker** position to the planned **marker** position, which has been transferred from the 3DRTP and superimposed on the fluoroscopic **image** on the display unit of the RTRT system. The position of the **markers** can be visualized during irradiation and after treatment delivery to verify the accuracy of the...

...this system for the treatment setup on 91 occasions. Results: After manual setup using skin **markers** , the median of absolute value of discrepancies between the actual position of the **marker** and the planned position of the **marker** for prostate cancer was 3.4 (0.1-8.9) mm, 4.1 (0.2...

...3 (0.0-10.6) mm for the lateral, anteroposterior, and craniocaudal directions, respectively. The **3D** median distance between the actual and planned positions of the **marker** was 6.9 (1.1-18.2) mm for prostate cancer and 6.9 (1.7-18.6) mm for bladder cancer. After relocation using RTRT, the **3D** distance between the actual and planned position of the **marker** was 0.9 +- 0.9 mm. Median **3D** distances between actual positions after treatment delivery and planned positions were 1.6 (0.0...

...3) mm and 2.0 (0.5-8.0) mm during daily radiotherapy for the **marker** in patients with prostate cancer and bladder cancer, respectively. Conclusion: We believe the new positioning system can **reduce** uncertainty due to setup error and internal organ motion, although further improvement is needed for...
...METHODS & EQUIPMENT: **3 - dimensional** treatment planning, implanted **marker** use, therapeutic method, tumor positioning

33/3,K/4 (Item 4 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

10179898 BIOSIS NO.: 199698634816
Double-tilt electron tomography.
AUTHOR: Penczek Pawel; Marko Michael; Buttle Karolyn; Frank Joachim(a)
AUTHOR ADDRESS: (a)Wadsworth Center Lab. Res., New York State Dep. Health, P.O. Box 509, Empire State Plaza, Albany**USA
JOURNAL: Ultramicroscopy 60 (3):p393-410 1995
ISSN: 0304-3991
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Fidelity of tomographic reconstructions is improved and reconstruction artifacts are **reduced** , without increasing the number of projections, by combining tilt series taken around two orthogonal axes...

...for selecting tilt angles for the projections are compared. A new method for aligning fiducial **markers** is described. It uses an iterative algorithm to determine the shift, scale, in-plane rotation and tilt angle for each tilt **image** , enforcing agreement of the expected locations of the fiducial **markers** in **3D** space. These **3D** locations are used to find the orientation between two tilt series and to merge both **sets** of projections.

33/3,K/5 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

11506458 EMBASE No: 2002078084
The impact of SUP18 FDG-PET on target and critical organs in CT-based treatment planning of patients with poorly defined non-small-cell lung carcinoma: a prospective study
Mah K.; Caldwell C.B.; Ung Y.C.; Danjoux C.E.; Balogh J.M.; Ganguli S.N.; Ehrlich L.E.; Tirona R.
K. Mah, Department of Medical Physics, Toronto-Sunnybrook, Regional Cancer Centre, 2075 Bayview Avenue, Toronto, Ont. M4N 3M5 Canada
AUTHOR EMAIL: kathy.mah@tsrcc.on.ca
International Journal of Radiation Oncology Biology Physics (INT. J. RADIAT. ONCOL. BIOL. PHYS.) (United States) 01 FEB 2002, 52/2 (339-350)
CODEN: IOBPD ISSN: 0360-3016
PUBLISHER ITEM IDENTIFIER: S0360301601018247
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 38

...the impact of coregistering SUP18F-fluoro-deoxy-2-glucose hybrid positron emission tomographic (FDG-PET) **images** with CT **images** on the planning target volume (PTV), target coverage, and critical organ dose in radiation therapy...

...both FDG-PET and CT simulation procedures on the same day, in radiation treatment position. **Image sets** were coregistered using external fiducial **markers** . Three radiation oncologists independently defined the gross tumor volumes, using first CT data alone and...

...The effect of FDG-PET on target definition varied with the physician, leading to a **reduction** in PTV in 24-70% of cases and an increase in 30-76% of cases...

...ranged from 0.40 to 1.86. On average, FDG-PET information led to a **reduction** in spinal cord dose but not in total lung dose, although large differences in dose...

...were seen for a few individuals. Conclusion: The coregistration of planning CT and FDG-PET **images** made significant alterations to patient management and to the PTV. Ultimately, changes to the PTV...

...PET data be integrated into treatment planning of non-small-cell lung carcinoma, particularly for **three - dimensional** conformal techniques.

MEDICAL DESCRIPTORS:
treatment planning; prospective study; positron emission tomography; computer assisted tomography; lung volume; target organ; **image** analysis;

histogram; palliative therapy; dosimetry; human; male; female; clinical article; controlled study; aged; adult; clinical...

33/3,K/6 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

05725273 88146345 PMID: 3344552
A method for monitoring the collapse of plastic sections as a function of electron dose.
Luther P K; Lawrence M C; Crowther R A
Biophysics Section, Blackett Laboratory, Imperial College, London, UK.
Ultramicroscopy (NETHERLANDS) 1988, 24 (1) p7-18, ISSN 0304-3991
Journal Code: 7513702
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: Completed

... the specimen normal to the plane of the section causes a relative movement in the **image** of the two **sets** of particles **marking** the two surfaces. By measuring the positions of a few gold particles on each side ...

... the section in each exposure of the series, the collapse and also the in-plane **shrinkage** can be computed. The sections exhibit a rapid initial collapse, followed by a much slower phase of thinning. These effects should be taken into account when producing quantitative **three - dimensional** maps from tilt series of sectioned material.
?

42/3,K/1 (Item 1 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

13407207 BIOSIS NO.: 200200036028
Ultrasonic image **diagnosing apparatus for displaying** three - dimensional image
AUTHOR: Yamazaki T; Kawashima T
AUTHOR ADDRESS: Sagamihara**Japan
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1184 (2):p806 March 12, 1996
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Citation
LANGUAGE: English

Ultrasonic image **diagnosing apparatus for displaying** three - dimensional image
PATENT ASSIGNEE: **OLYMPUS OPTICAL** CO., LTD.

42/3,K/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

12762620 BIOSIS NO.: 200000516243
Endoscope form detecting apparatus in which coil is fixedly mounted by insulating member so that form is not deformed within endoscope.
AUTHOR: Taniguchi Akir(a); Uchimura Sumihiro; Ishii Tsukasa; Hara Masanao; Matsuura Nobuyuki; Miyano Yasuo
AUTHOR ADDRESS: (a)Hashioji**Japan
JOURNAL: Official Gazette of the United States Patent and Trademark Office Patents 1234 (2):pNo pagination May 9, 2000
MEDIUM: e-file
ISSN: 0098-1133
DOCUMENT TYPE: Patent
RECORD TYPE: Abstract
LANGUAGE: English

PATENT ASSIGNEE: **Olympus Optical** Co., Ltd., Tokyo, Japan

...ABSTRACT: are arranged at known positions around the subject are combined with each other to calculate **three - dimensional** positions of the magnetic-field generating elements or the magnetic-field detecting elements within the insertion part. Further, a form of the insertion part is estimated, and a **three - dimensional image** corresponding to a form of the insertion part is produced. Moreover, a **three - dimensional image** is projected onto a screen surface to display a stereoscopic **image** corresponding to the form of the insertion part.

42/3,K/3 (Item 3 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)

11477451 BIOSIS NO.: 199800258783
Endoscopic three dimensional **topological** image **analysis using sequentially recorded** images .
AUTHOR: Endo Yutaka(a); Takahashi Hiroshi; Kirihara Kazutaka; Kaminaga Norhiro; Fujita Rikiya

AUTHOR ADDRESS: (a)Div. Gastroenterol., Fujigaoka Hosp., Showa Univ. Sch. Med., 1-30 Fujigaoka, Aoba-ku, Yokohama 2**Japan
JOURNAL: Stomach and Intestine (Tokyo) 33 (2):p161-166 Feb., 1998
ISSN: 0536-2180
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: Japanese; Non-English
SUMMARY LANGUAGE: Japanese; English

Endoscopic three dimensional **topological** image **analysis using sequentially recorded** images .

ABSTRACT: We have employed a new endoscopic topological **image** analyzing system in collaboration with the Imaging Science and Engineering Laboratory, the Tokyo Institute of Technology and the **Olympus Optical** Co. Ltd. The system consists of an ordinary video endoscope system (EVIS 200), a frame...

...magnetic optical (MO) recorder and a computer (work station). This analyzing system uses endoscopic sequential **images** . The sequential **images** are firstly stored in a frame memory and then converted into a digital signal, and recorded on an MO disk. The recorded **images** are analyzed with a computer. The analyzing theory is as follows: firstly, matching points in the endoscopic **images** are detected between the continuous **images** after distortion correction has been made and the area of hallation is excluded. The matching points are detected serially and finally, the matching point of the first and the last **image** is detected. Secondly, the movement of the scope is estimated based on the triangle measurement theory, the same as that used in stereo-videoendoscopy. The parallax between the **images** caused by the movement of the endo. scope can be determined by detecting the matching point of the first and last **image** . Thirdly, the shape of the lesion can be reconstructed by using the data concerning the...

...with this system (less than 2 cm in diameter), we could reconstruct precise 3-D **images** of minute gastric cancers, gastric polyps etc. Although endoscopic diagnosis greatly depends on the knowledge... METHODS & EQUIPMENT: endoscopic **three dimensional** topological **image** analysis...

...imaging method, sequentially recorded **images**

42/3,K/4 (Item 1 from file: 198)
DIALOG(R)File 198:Health Devices Alerts(R)

00706937 ABS-39070 SUBFILE: ABS
PRODUCT(s): 14-047 THORACOSCOPES
12-900 Leads, Pacemaker, Implantable Endocardial
12-913 Pacemakers, Cardiac, Implantable
16-603 Video Monitors
17-639 Pacing System Analyzers, Intraoperative
18-034 Video **Image** Processors, Endoscopic

SOURCE: Sirbu H, Zenker D, Busch T. Video-assisted thoracic surgical implantation of an endocardial pacemaker: a challenging procedure. "J Thorac Cardiovasc Surg" 2001 Sep;122(3):491-2.

...PRODUCT(s): Cardiac, Implantable

16-603 Video Monitors
17-639 Pacing System Analyzers, Intraoperative
18-034 Video **Image** Processors, Endoscopic
...COMMON DEVICE NAME: 1) 45<degrees> Thoracoscopes, (2) Model OTV-S6 Screen Systems; Bipolar Steroid-Eluting Pacemaker Leads: (**3**) **Model** 5076 CapSure Fix Atrial, (4) Model 4092 CapSure SP Novus Ventricular Endocardial; (5) Model DR...

MANUFACTURER: 1 and 2) **Olympus Optical** Co Ltd {139278}, 2-43-2 Hatagaya Shibuya-ku, Tokyo 151, Japan; (3, 4, and...

42/3,K/5 (Item 2 from file: 198)
DIALOG(R)File 198:Health Devices Alerts(R)
(c) 2003 ECRI-nonprft agncy. All rts. reserv.

00684765 ABS-33210 SUBFILE: ABS
PRODUCT(s): 18-037 VIDEO **IMAGE** PROCESSORS

SOURCE: van Bergen P, Kunert W, Bessell J, et al. Comparative study of two-dimensional and three-dimensional vision systems for minimally invasive surgery. "Surg Endosc" 1998 Jul;12(7):948-54.

PRODUCT(s): 18-037 VIDEO **IMAGE** PROCESSORS
COMMON DEVICE NAME: **3 - Dimensional** Vision Systems: (1) Baxter, (2) L.O.S., (3) Olympus, (4) Wolf, (5) Zeiss; (6...

...MANUFACTURER: Hill Ave, Irvine CA 92614; (2) Laser Optik Systeme Gmbh & Co Kg, Mainz, Germany; (3) **Olympus Optical** Co (Europa) GmbH {155981}, Wendenstrasse 14-16, D-20097 Hamburg, Germany; (4 and 6) Richard...

The authors compared the use of the 2-dimensional (2-D) and the **3 - dimensional** (**3** -D) vision system for minimally invasive surgery. 62% of 169 surgeons judged system performance to...

... D system. The authors state that the 12 mm single-channel system had better plastic **images** than the 10 mm single-channel system. They also state that use of heavy, uncomfortable...

42/3,K/6 (Item 3 from file: 198)
DIALOG(R)File 198:Health Devices Alerts(R)
(c) 2003 ECRI-nonprft agncy. All rts. reserv.

00335020 ABS-25244 SUBFILE: ABS
PRODUCT(s): 17-662 BRONCHOSCOPES, FLEXIBLE, VIDEO

SOURCE: "FDA Enforcement Rep" 1994 Mar 30; Distributor.

COMMON DEVICE NAME: Olympus Series 200 Video Bronchoscopes: (1) Model BF-200, (2) **Model** BF-P200, (**3**) **Model** BF-1T200

MANUFACTURER: **Olympus Optical** Co Ltd {139278}, 22-2 Nishi-Shinjuku 1-chome San-Ei Bldg Shinjuku-ku, Tokyo...

... CCD chip failure because of static electricity discharge and may result in loss of the **image** generated by the chip. The distributor initiated a recall by letter dated February 8, 1994...
?

File 9:Business & Industry(R) Jul/1994-2003/Feb 03
(c) 2003 Resp. DB Svcs.
File 15:ABI/Inform(R) 1971-2003/Feb 01
(c) 2003 ProQuest Info&Learning
File 20:Dialog Global Reporter 1997-2003/Feb 04
(c) 2003 The Dialog Corp.
File 484:Periodical Abs Plustext 1986-2003/Jan W4
(c) 2003 ProQuest
File 553:Wilson Bus. Abs. FullText 1982-2002/Dec
(c) 2003 The HW Wilson Co
File 624:McGraw-Hill Publications 1985-2003/Feb 03
(c) 2003 McGraw-Hill Co. Inc
File 88:Gale Group Business A.R.T.S. 1976-2003/Feb 03
(c) 2003 The Gale Group
File 275:Gale Group Computer DB(TM) 1983-2003/Feb 03
(c) 2003 The Gale Group
File 570:Gale Group MARS(R) 1984-2003/Feb 03
(c) 2003 The Gale Group
File 621:Gale Group New Prod.Annou.(R) 1985-2003/Jan 31
(c) 2003 The Gale Group
File 636:Gale Group Newsletter DB(TM) 1987-2003/Feb 03
(c) 2003 The Gale Group
File 613:PR Newswire 1999-2003/Feb 04
(c) 2003 PR Newswire Association Inc
File 623:Business Week 1985-2003/Feb 03
(c) 2003 The McGraw-Hill Companies Inc
File 610:Business Wire 1999-2003/Feb 04
(c) 2003 Business Wire.
File 98:General Sci Abs/Full-Text 1984-2003/Dec
(c) 2003 The HW Wilson Co.
File 75:TGG Management Contents(R) 86-2003/Jan W4
(c) 2003 The Gale Group
File 369:New Scientist 1994-2003/Jan W4
(c) 2003 Reed Business Information Ltd.
File 144:Pascal 1973-2003/Jan W4
(c) 2003 INIST/CNRS
File 370:Science 1996-1999/Jul W3
(c) 1999 AAAS
File 264:DIALOG Defense Newsletters 1989-2003/Feb 03
(c) 2003 The Dialog Corp.
File 608:KR/T Bus.News. 1992-2003/Feb 04
(c)2003 Knight Ridder/Tribune Bus News
File 112:UBM Industry News 1998-2003/Feb 03
(c) 2003 United Business Media
File 16:Gale Group PROMT(R) 1990-2003/Feb 03
(c) 2003 The Gale Group
File 160:Gale Group PROMT(R) 1972-1989
(c) 1999 The Gale Group
File 47:Gale Group Magazine DB(TM) 1959-2003/Feb 03
(c) 2003 The Gale group
File 80:TGG Aerospace/Def.Mkts(R) 1986-2003/Feb 03
(c) 2003 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2003/Feb 04
(c)2003 The Gale Group
File 634:San Jose Mercury Jun 1985-2003/Feb 02
(c) 2003 San Jose Mercury News
File 635:Business Dateline(R) 1985-2003/Feb 01
(c) 2003 ProQuest Info&Learning
File 647:CMP Computer Fulltext 1988-2003/Jan W3
(c) 2003 CMP Media, LLC
File 674:Computer News Fulltext 1989-2003/Jan W3

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        (c) 2003 IDG Communications
File 810:Business Wire 1986-1999/Feb 28
        (c) 1999 Business Wire
File 696:DIALOG Telecom. Newsletters 1995-2003/Feb 03
        (c) 2003 The Dialog Corp.
File 813:PR Newswire 1987-1999/Apr 30
        (c) 1999 PR Newswire Association Inc
? ds

Set     Items   Description
S1    8840956   IMAGE? OR PICTURE? OR GRAPHIC? OR PHOTOS OR PHOTOGRAPH?? OR
             PHOTO
S2     176388   PIXEL? OR PEL OR PICTURE()ELEMENT? OR PICEL?? OR PIXCEL??
S3     349061   3D
S4     607644   (THREE OR THIRD OR 3)(3N)(DIMENSION? OR SHAPE? OR MODEL? OR
             REPRESENTATION? OR SCENE?)
S5    1237420   OBJECT??
S6      17268   (POSITION? OR PLACEMENT? OR LOCATION?)(10N)ORIENTATION?
S7     120220   POSTURE?
S8    1659117   (MARKER? OR MARKS OR MARKING?)
S9         55   (SENSING OR SENSE OR DETECT? OR DETERMIN? OR ANALY? OR EST-
            IMAT? OR CALCULAT?)(S)S6(S)S7
S10     95540   S1(5N)(REDUC? OR SHRINK? OR COMPRESS?)
S11       374   (PLURAL? OR MANY OR NUMEROUS OR MULTI OR MULTIPLE OR SEVER-
            AL)(3N)SETS(3N)PARAMETER?
S12    843960   CAMERA?
S13      3314   (REGION OR AREA)(3N)EXTRACT?
S14      7729   AU=(ABRAMS, S? OR OPPENHEIM, D? OR PAZEL, D? OR WRIGHT, J?
            OR ABRAMS S? OR OPPENHEIM D? OR PAZEL D? OR WRIGHT J?)
S15      1955   (S1 OR S2)(S)(S3 OR S4)(S)S8
S16         0   S15(S)S9
S17         0   S15(S)S13
S18         0   S15(S)S14
S19         0   S15 AND S14
S20         0   S15(S)S11
S21      4831   OLYMPUS()OPTICAL
S22      1069   CO='OLYMPUS OPTI-ELECTRONICS':CO='OLYMPUS OPTICAL CO LTD'
S23       799   CO='OLYMPUS OPTICAL CO.':CO='OLYMPUS OPTICAL COMPANY, LTD.'
S24         3   CO='OLYMPUS OPTICAL CORP':CO='OLYMPUS OPTIKAL CS'
S25      4834   S21:S24
S26         2   S15 AND S25
S27         1   RD S26 (unique items)
S28        95   S15(S)OPTICAL
S29        53   S28 NOT PY=>2000
S30        41   RD S29 (unique items)
S31         7   S1(S)S9
S32         7   S31 NOT (S26 OR S28)
S33         7   RD S32 (unique items)
```

27/3,K/1 (Item 1 from file: 88)

05593252 SUPPLIER NUMBER: 67161700
Effect of magnetic endoscope imaging on colonoscopy performance: a randomised controlled trial.
Shah, Syed G; Brooker, Jim C; Williams, Christopher B; Thapar, Catherine; Saunders, Brian P
The Lancet, 356, 9243, 1718
Nov 18, 2000
ISSN: 0099-5355 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 4397 LINE COUNT: 00428

... coils external to the patient. From the electrical signal produced, the precise position (in a **three - dimensional** plane) and orientation of each generator coil can be calculated. With computer software, a smooth curve is drawn through the calculated points, generating a **graphical image** of the colonoscope shaft (figure 1). A **three - dimensional** effect is created with polygon rendering and grey-scale shading. The colonoscope can be displayed...

...or lateral view (or both views together). To provide additional anatomical information, three external position **markers** are set at the beginning of the procedure and displayed on the **imager** view (figure 2). A continuous display of the length of endoscope inserted is recorded, and the **imager** view is updated every 0.2 s, making the system effectively real time. **Images** are recorded on computer disk for subsequent replay or analysis.

Study design

Consecutive outpatients, excluding...

...over 10 000 colonoscopies), with a conventional 160 cm video colonoscope (Olympus CF-1T200L scope, **Olympus Optical** Co Ltd). Patients examined by trainees were recruited from St Mark's Hospital, London and...to acknowledge John Bladen of JSB Medical Systems, Sheffield, for his technical assistance and support. **Olympus Optical** Co Ltd provided the magnetic endoscope imaging system.

Wolfson Unit for Endocopy, St Mark's...

30/3,K/1 (Item 1 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext

03886687 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Deformation structures from the toes of active accretionary prisms
Maltman, Alex J
Journal of the Geological Society (IJGS), v155 (Part 4), p639-650, p.22
Jul 1998
ISSN: 0016-7649 JOURNAL CODE: IJGS
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 9231

TEXT:
... bands, ductile shear zones, and faults.' ' Some deformation bands are zones within which a preexisting **marker** such as' bedding fissility undergoes abrupt, angular deflection (Fig. 2a). They are' effectively kink-bands...giving a sharply bounded, fault-like appearance. If it is' possible to discern pre-existing **markers** , the amount of their displacement ' typically a distance many times greater than the width of...

...the' material has behaved brittley and the structure is reasonably termed a faul' Such displaced **markers** are not, however, commonly seen. All deformation ban' when viewed from a distance represent brittle...
...aligned phyllosilicates in the host sediment swinging into the' bands in a convex-downwards. mirror- **image** arrangement rather than the' sigmoidal pattern typical of shear zones, and some examples record upward...The sense of movement on the faults is commonly elusive, through the lack o' displaced **markers** , but some are clearly reverse in nature while others are' normal. Like deformation bands the...

...in' only one was a change in chemistry observed (increase in Fe). Examination' under the **optical** microscope simply showed a greater degree of phyllosilica' alignment and little sign of mineralization or... themselves (Labaume et al. 1997b). This w' also demonstrated that a combination of observational techniques (**optical** ' microscopy, backscattered and secondary mode SEM and TEM) is best suited to' obtaining a clear is difficult to discern macroscopically but its nature is' easily seen at the **optical** and electron microscope scales. Its important' characteristic is that the clasts are derived from the...

...no preferred alignments; the texture shows no evidence of having been' generated by shearing (Fig. **3d** ; see also Maltman et al. 1993, plate 3). Thu' this kind of breccia differs from...California. They demonstrated that the veins showed such a high degree of' inter-connectivity in **three - dimensions** that the structure could cumulativel' play an important role in the dewatering of large volumes...

...et al. 1995). During ODP drilling of the Nankai prism, it ' possible to reconstruct in **three - dimensions** the frontal thrust of the prism' and its associated hanging-wall anticline by combining knowledge of the' displacement of a **marker** -bed and the depth in three adjacent drill-holes of' the movement horizon with the...Society, London, Special' Publications, 54, 417430.' ' PRIOR, D.J. & BEHRMANN, J.H. 1990a. Backscattered SEM **imagery** of fine--' grained sediments from Site 671, Leg 110-Preliminary Results. In: MOORE, J.' MASCLE...

...Society, London, Special Publications, 78, 113-125.' ' Reference:' ' TAIRA, A., BYRNE, T. & ASHI, J. 1992a. **Photographic** At/as of an

Accretionar' Prism. Geologic structures of the Shimanto Belt. University of Tokyo...

30/3,K/2 (Item 2 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext

03853557 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Molecular imaging beats limits of light
Van den Berg, Rob
Science (GSCI), v281 n5377, p629, p.1
Jul 31, 1998
ISSN: 0036-8075 JOURNAL CODE: GSCI
DOCUMENT TYPE: News
LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 538

TEXT:
... for example, label genes with different fluorescent molecules, then determine the precise positions of these **marker** molecules to learn, say, how the DNA twists and coils. Kohler and his colleagues, says Niek van Hulst of the University of Twente in the Netherlands, "are pushing **optical** microscopy to its limits."
-ROB VAN DEN BERG
Author Affiliation:
Rob van den Berg is...

30/3,K/3 (Item 3 from file: 484)
DIALOG(R)File 484:Periodical Abs Plustext

02433203 (USE FORMAT 7 OR 9 FOR FULLTEXT)
The growing reality of virtual reality
Stevens, Jane Ellen
Bioscience (GBSC), v45 n7, p435-439, p.5
Jul 1995
ISSN: 0006-3568 JOURNAL CODE: GBSC
DOCUMENT TYPE: Feature
LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3544 LENGTH: Long (31+ col inches)

TEXT:
... fragments are fitting together. Cutting recently completed the first surgery marking facial bone fragments with **optical** probes developed by **Image** Guided Technologies. As he positioned the fragments, he watched the bones move in a **three - dimensional** display on a computer screen.
At this point, that type of guided-imaging technology does...

30/3,K/4 (Item 1 from file: 553)
DIALOG(R)File 553:Wilson Bus. Abs. FullText

04047445 H.W. WILSON RECORD NUMBER: BWBA99047445 (USE FORMAT 7 FOR FULLTEXT)
Preparing financial graphics: principles to make your presentations more effective.
Fulkerson, Cheryl Linthicum

Pitman, Marshall K; Frownfelter-Lohrke, Cynthia
The CPA Journal v. 69 no6 (June 1999) p. 28-33
LANGUAGE: English
WORD COUNT: 2510

(USE FORMAT 7 FOR FULLTEXT)

TEXT:
... background
Use clearly defined borders
Use few (not more than six) clearly distinguishable colors
Avoid **optical** illusions (e.g., **3D** **images**)
Scales
Include a continuous scale
Begin the scale at zero
Place the variable of interest...
...baseline at zero
In bar graphs, use bars of uniform width, uniformly spaced
Avoid overlapping **markers**
Limit the number of sections in a pie chart to those that can be identified...

30/3,K/5 (Item 1 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05110504 SUPPLIER NUMBER: 54711283
Atom Lasers Get More Laserlike.(Brief Article)
VOSS, DAVID
Science, 283, 5408, 1611
March 12, 1999
DOCUMENT TYPE: Brief Article ISSN: 0036-8075 LANGUAGE: English
RECORD TYPE: Fulltext
WORD COUNT: 939 LINE COUNT: 00072

... meter sticks can be made. Researchers typically define such fundamental standards by counting wavelengths of **optical** light like the ticks of a clock or the **marks** on a ruler, but the quantum mechanical waves from atoms are much smaller, allowing far...

...atomic holography. Just as a conventional hologram interferes beams of photons together to create a **three - dimensional** **image** , so an atom hologram could combine beams of atoms to build a **3D** solid object. Such a technique could be used to grow nanostructures for integrated circuits or ...

30/3,K/6 (Item 2 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

04216991 SUPPLIER NUMBER: 19254956
Reversible optical data storage on poly(ethylene terephthalate).
Buckley, G.S.; Roland, C.M.
Polymer Engineering and Science, v37, n1, p138(7)
Jan, 1997
ISSN: 0032-3888 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2899 LINE COUNT: 00241

... greater than)30 year lifetime for archiving).
A potential material for the storage of submicron **optical images** is poly(ethylene terephthalate) (PET), a low-cost plastic with good mechanical properties. Rapid, nonequilibrium...

...chemical bond rupture in PET; removal by vaporization of the decomposition by-products creates a **three - dimensional image** . Using an ultraviolet laser, such ablation has been used to produce diffraction gratings in PET...

...with infrared laser radiation has also been carried out; however, only very coarse, ill-defined **images** were produced, because of interference from the crystallites (10). More recently it was shown (11-13) that intricate, high-quality **images** , smaller than 1 ((micro)meter), could be produced by ablation of PET with C(O...

...as a thermal process because a single infrared photon provides insufficient energy to effect the **marking** event. Thermal processes are inherently nonlinear, since the extent of the medium's response (i...

30/3,K/7 (Item 1 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

02166232 SUPPLIER NUMBER: 20037418 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Motion capture advances. (includes table of product features) (Buyers Guide)
Coco, Donna
Computer Graphics World, v20, n11, p37(5)
Nov, 1997
DOCUMENT TYPE: Buyers Guide ISSN: 0271-4159 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2625 LINE COUNT: 00205

... lens there's a linear sensor," says Hockey. "A video sensor, (which is what most **optical** systems use), is 2D. Ours is linear, so it's just a big line of **pixels** . What you get is a blurred waveform of a **marker** . It takes three of those to get a **3D** position, so we're getting the actual **3D** coordinate set." As such, there is no postprocessing and the system is real-time.
Recent...

30/3,K/8 (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

02013819 SUPPLIER NUMBER: 18884286 (USE FORMAT 7 OR 9 FOR FULL TEXT)
So you want to do motion capture? (Digital Magic supplement) (Technology Tutorial)
Gray, Steve; Williams, Darnell
Computer Graphics World, v19, n11, pD28(6)
Nov, 1996
ISSN: 0271-4159 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2698 LINE COUNT: 00203

... off into the process itself, a quick review of optical technology is in order.
With **optical** systems, a group of serially linked, high-resolution

monochrome video cameras (typically from two to...

...mounted with an infra-red or near-IR strobing illumination ring, and the performer is **markered** with "Scotch-lite" reflective spheres at specific joints (much smaller **markers** are used for facial captures). The cameras recognize only the **image** of the reflected IR data; as such, each camera calculates **3D** positional data by cross-referencing the other cameras.
It's important to note that the...

30/3,K/9 (Item 3 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01974119 SUPPLIER NUMBER: 18593106
Making characters mooooooove. (motion-capture technology) (Digital Magic) (Technology Information)
Maestri, George
Computer Graphics World, v19, n8, pS31(4)
August, 1996
ISSN: 0271-4159 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 1930 LINE COUNT: 00153

... performers is one of many possible uses of the CyberSight technology.
Another company providing unconstrained, **markerless optical** capture is CompInt, with its Photo4D-Pro software. Originally developed as a way to produce models from **photos** , the software has been expanded to capture 2D and **3D** motion as well. This is how it works. The user records the subject using two or more video cameras and imports the videos into Photo4D for processing. The user then **marks** the feature points in one frame, and Photo4D tracks them in subsequent frames, then computes...

30/3,K/10 (Item 4 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)

01890633 SUPPLIER NUMBER: 17958946 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Capturing motion. (motion-capture systems)(includes related article on designing motion) (Technology Information)
Maestri, George
Computer Graphics World, v18, n12, p47(5)
Dec, 1995
ISSN: 0271-4159 LANGUAGE: English RECORD TYPE: Fulltext; Abstract
WORD COUNT: 2461 LINE COUNT: 00200

ABSTRACT: Computer **graphics** developers have three choices when it comes to motion-capture systems. Motion-capture technology places **optical markers** on animals or humans to monitor, capture and record motions. If the organization's needs...

...600 per man-day for post-processing of motion data. Motion-capture systems can be **optical** or magnetic. **Optical** systems' prices begin at over $60,000 and allow unencumbered motion and data rates up to 240 frames per second, but they slow 2D-to- **3D** processing, require manual input of occluded **markers** and cannot discern multiple actors in the same scene. Magnetic systems start at $20,000...

30/3,K/11 (Item 1 from file: 621)
DIALOG(R)File 621:Gale Group New Prod.Annou.(R)

01351901 Supplier Number: 46176672 (USE FORMAT 7 FOR FULLTEXT)
For Electronic OEMs & Machine Builders -- GridLok Saves At Least 50% Cost and Up To 73% Development Time when Integrating Precision Optical Adjustment Systems into Their Products
News Release, pN/A
Feb 27, 1996
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 760

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
...the easiest and most cost effective way for Electronic OEMs and machine builders to embed **optical** registration needed for precision alignment tasks into their manufacturing equipment. A GridLok system includes a single software application marrying both the vision hardware, to optically locate fiducial **marks** , and motion control hardware, to control table positions, for a package that can be seamlessly integrated. OEMs easily modify the Microsoftr Windows **graphical** user interface for their own look-and-feel and can extend the application to include...
...core vision/motion integration issues. And, algorithms for camera and table interaction along with precise **optical** search are known to be the most accurate and robust in the industry (up to 1/10 **pixel** repeatability, 1/4 **pixel** accuracy). GridLok includes everything necessary to: acquire **images** from two cameras, do precision full-field search, control a multi-axis table, calibrate out...

...find and expensive undertaking. Choosing and developing optimum lighting, optics, vision components, and programming the **image** analysis techniques--along with integrating these results with the motion controller--typically takes man-years...

...and know-how to solve their quality problems with advanced techniques in ID, 2D, and **3D** camera technology; as well as gray scale and color processing. Integral Vision systems are used...

30/3,K/12 (Item 1 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

04040680 Supplier Number: 53400322 (USE FORMAT 7 FOR FULLTEXT)
New tools for those who wield them in the orthopedics arena.
The BBI Newsletter, v21, n6, pNA
June, 1998
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 1174

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
...the implant can greatly affect accurate placement of the implant. The team has developed an **image** -guided surgical navigational system, HipNav (Hip Naviga-tional System), that permits surgeons to make very precise intraoperative measurements of orientation and alignment. The system uses an **optical** localizer which tracks **markers** implanted in the wing of the

ileum and on the cup alignment handle in order...

...the acetabular implant. Custom software determines the relationship between the patient's position and a **three - dimension** -al preoperative plan generated from CT data. The system continuously tracks the pelvis and implant...
...will establish more reliable anatomic-based alignment strategies to assist surgeons in cup alignment. Similar **image** -guided systems have been developed during the last few years for ENT and spinal procedures...

30/3,K/13 (Item 2 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

03590838 Supplier Number: 47433481 (USE FORMAT 7 FOR FULLTEXT)
POLYMERS/COATINGS:Reversible Data Storage on PET
Optical Materials & Engineering News, v7, n10, pN/A
June 1, 1997
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 487

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
...a great deal of interest at present in the use of polymers as media for **optical** data storage. Commercial feasibility requires the meeting of certain criteria. **Marking** speed and sensitivity must be nor more than one nanojoule (nJ) per mark, and production of **images** must be acute, indelible, and durable, with at least a 30 year lifetime for archiving...

...cost plastic with good mechanical properties, is a potential material for the storage of submicron **optical images** . Rapid, non- equilibrium heating induces chemical bond rupture in PET, and a **three dimensional image** is created by vaporizing the decomposition by-products.

30/3,K/14 (Item 3 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

02770398 Supplier Number: 45621771 (USE FORMAT 7 FOR FULLTEXT)
CHINON TO SHIP FIRST AFFORDABLE 3D SYSTEM PROVIDING VIRTUAL REALITY EXPERIENCE
M2 Presswire, pN/A
June 22, 1995
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 472

... easy-to-use Advanced Programming Interface (API) for developing or adapting CD-ROM titles for **3D** stereo **graphics** display, using the CyberShades technology: Telephone (310) 533-0274 ext. 670. Chinon is a world...

...drives. The company also manufactures multimedia hardware and software, OEM printer components, electronic imaging and **optical** products. CyberShades is the companys first venture into virtual reality and **marks** a new era for Chinon, which is expanding into a full-service interactive multimedia manufacturing...

30/3,K/15 (Item 4 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

02532036 Supplier Number: 45102890 (USE FORMAT 7 FOR FULLTEXT)
AEROSPACE COMPOSITES - The laser projection revolution
Advanced Composites Bulletin, pN/A
Nov, 1994
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 854

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
Three - dimensional laser projection technology for use with ply lay-up and tool verification is fast becoming...

...of reference points positioned on a tool. Confidence in the accuracy of the laser projected **image** for ply alignment has grown with usage and no back-up checks are considered necessary...

...they are also difficult to modify in response to engineering changes (which is straightforward for **optical** templates generated by CAD files). An impossible factor to quantify in terms of cost is...
...projection system, tool accuracy can be confirmed in seconds. Two laser heads, operating independently, seek **optical markers** and project an **image** onto the tool. If the tool is accurate, the projected **images** from the two laser heads will superimpose. If not, then the **images** will be displaced with the degree of tool inaccuracy indicated by the displacement between **images** . This means of course that tools can be verified continuously and regularly during manufacture, before...

30/3,K/16 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

14365571 PASCAL No.: 00-0017649
Building virtual 3D bone fragments models to control diaphyseal fracture reduction
Image display : San Diego CA, 21-23 February 1999
LELOUP T; SCHUIND F; LASUDRY N; VAN HAM P
SEONG KI MUN, ed; YONGMIN KIM, ed
Univ. of Brussels, Faculty of Applied Sciences, Logic and Digital System Dept., CP 165/57, av. F. Roosevelt 50, 1050 Brussels, Belgium; Univ. of Brussels, Erasme Hospital, Orthopaedics and Traumatology Dept., route de Lennik 808, 1070 Brussels, Belgium
International Society for Optical Engineering, Bellingham WA, United States.; American Association of Physicists in Medicine, Chicago IL, United States.; American Physical Society, New York NY, United States.; Food and Drug Administration, Washington DC, United States.; National Electrical Manufacturers Association, Washington DC, United States.; Society for Imaging Science and Technology, Springfield VA, United States.; Radiological Society of North America, Oak Brook IL, United States.; Society for Computer Applications in Radiology, United States.
Image display. Conference (San Diego CA USA) 1999-02-21
Journal: SPIE proceedings series, 1999, 3658 315-323
Language: English

... which is effected with a brilliance amplifier (scope). This system, giving instantly a X-ray **image** , has many disadvantages. It implies frequent irradiation to the patient and the surgical team, the visual field is limited, the supplied **images** are distorted and it only gives two-dimensional information. Consequently, the reduction is occasionally imperfect...

... intraoperatively it appears acceptable. Using the pins inserted in each fragment as markers and an **optical** tracker, it is possible to build a virtual **three - dimensional model** for each principal fragment and to follow its movement during the reduction. This system will supply a **3D image** of the fracture in real time and without irradiation. The brilliance amplifier could then be...

...of the fracture. The purpose of this work is to show how to build the **3D** model for each principal bone fragment.

30/3,K/17 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

14199554 PASCAL No.: 99-0399422
3D motion estimation for articulated human templates using a sequence of stereoscopic image pairs
Visual communications and image processing '99 : San Jose CA, 25-27 January 1999
WEIK S; NIEMEYER O
AIZAWA Kiyoharu, ed; STEVENSON Robert L, ed; YA-QIN ZHANG, ed
University of Hannover, Institut fuer Theoretische Nachrichtentechnik und Informationsverarbeitung, Germany
International Society for Optical Engineering, Bellingham WA, United States.
Visual communications and image processing '99. Conference (San Jose CA USA) 1999-01-25
Journal: SPIE proceedings series, 1998, 3653 (p.1) 1237-1246
Language: English

This contribution describes an approach towards **3D** teleconferencing. Textured, **3D** antropomorphic models are used in a virtual environment to give the impression of physical closeness. The requirements for such a conferencing system are on the one hand textured, articulated **3D** models of the conferees. For high realism a flexible deformation model has been integrated in the **3D** models. On the other hand these models have to be animated in the virtual meeting...

... be done optically. In this approach a gradient based motion tracker has been implemented. No **markers** or **optical** tracking points are needed to extract the hierarchic motion parameters of the conferee. It works on a stereoscopic **image** sequence and employs the flexible, articulated antropomorphic model of the conferee. The motion hierarchy of...

30/3,K/18 (Item 3 from file: 144)
DIALOG(R)File 144:Pascal

13541868 PASCAL No.: 98-0242683
Autoscan: A flexible and portable 3D scanner
BORGHESE N A; FERRIGNO G; BARONI G; PEDOTTI A; FERRARI S; SAVARE R
CNR Neuroscience and Bioimages Inst, Milan, Italy
Journal: IEEE Computer Graphics and Applications, 1998, 18 (3) 38-41
Language: English

Autoscan is a portable **3D** scanning system that provides flexibility, reliability, and accuracy for scanning **3D** surfaces. This scanning system reconstructs a **3D** surface as a large set of polygonal meshes. Although different technologies can acquire the data, **optical** scanning is preferred because it does not require contact with the surface and guarantees high...

... and accuracy. Autoscan consists of a laser pointer, a pair video cameras, a real-time **image** processor, and a computer host. The core of Autoscan, the Elite system, is designed for automatic motion analysis in the biomedical field, where motion is reconstructed from a set of **markers** attached to the moving object.

30/3,K/19 (Item 4 from file: 144)
DIALOG(R)File 144:Pascal
(c) 2003 INIST/CNRS. All rts. reserv.

12676606 PASCAL No.: 96-0376905
A double-axis microscope and its three - dimensional image **position adjustment based and an** optical marker **method**
KIKUCHI S; SONOBE K; SHINOHARA D; OHYAMA N; MASHIKO S; HIRAOKA Y
Imaging System Department, Olympus Optical Co., Ltd., 2-3, Kuboyama-cho, Hachioji, Tokyo 192, Japan
Journal: Optics communications, 1996, 129 (3-4) 237-244
Language: English

A double-axis microscope and its three - dimensional image **position adjustment based and an** optical marker **method**
...a double-axis microscope, in which two microscopic imaging systems are orthogonally placed, for reconstructing **3D** **images** of micro specimens. We first show the **optical** properties of the microscope by analyzing **3D** observation **images** of a small fluorescent sphere. We next propose a position adjustment method for **3D** **images** taken through the microscope using the small sphere as an **optical** **marker** .

30/3,K/20 (Item 5 from file: 144)
DIALOG(R)File 144:Pascal
(c) 2003 INIST/CNRS. All rts. reserv.

12354811 PASCAL No.: 95-0600502
Fabrication and characterization of platinum nanocrystalline material grown by electron-beam induced deposition
KOOPS H W P; KAYA A; WEBER M
Deutsche Telekom AG, FTZ, Am Kavalleriesand 3, 64295 Darmstadt, Germany
The 38th International symposium on electron, ion, and photon beams (Scottsdale, Arizona (USA)) 1995-05-30/1995-06-02
Journal: Journal of Vacuum Science and Technology B, 1995-11, 13 (6) 2400-2403
Language: English

The technique of electron-beam induced deposition allows **three - dimensional** structures to be generated on the nanometer scale. This is achieved in a scanning electron microscope equipped with a lithography attachment that enables separate position and time control for every **pixel** . By decomposing adsorbed molecules with the electron beam, structures are created on arbitrarily chosen substrates...

... on the current employed for deposition. The technique is applied to generate fields of dot **marks** visible in the **optical** microscope for metrology purposes. These dot arrays can be fabricated on the surface of finished **three - dimensional** structures without additional treatments like resist deposition or development. (c) 1995 American Vacuum Society

30/3,K/21 (Item 6 from file: 144)
DIALOG(R)File 144:Pascal

11996102 PASCAL No.: 95-0183088
Crystallizing mechanism and recording properties of In SUB 3 SbTe SUB 2 phase-change optical disks
NARUSE A; IKUTA I; ANDOH H; SATO Y; MINEMURA H
Hitachi, Ltd, Hitachi Research Laboratory, Hitachi-shi, Ibaraki 319-12, Japan
Journal: Japanese journal of applied physics, 1995, 34 (1 p.1) 156-160
Language: English

...the carrier-to-noise ratio (CNR) for In SUB 3 SbTe SUB 2 phase-change **optical** disks were examined by that transmission electron microscopy (TEM). The TEM **imagesd** indicated : (1) mark shapes were disorted when the interval between laser irradiations was short; (2) following dc laser irradiation onto the **marks** , crystallization proceeded only along the periphery of the amorphous phase; and (**3**) mark **shapes** were varied corresponding to the dc laser power. We assumed that the crystallization mechanism for...

... we simulated the mark shapes after dc irradiation. By controlling the thermal distribution on the **marks** , the CNR was improved promoted. We found that dc irradiation was a simple way of...

30/3,K/22 (Item 7 from file: 144)
DIALOG(R)File 144:Pascal

11675964 PASCAL No.: 94-0535197
Preexisting nuclear architecture defines the intranuclear location of herpesvirus DNA replication structures
DE BRUYN KOPS A; KNIPE D M
Harvard medical school, dep. microbiology molecular genetics, Boston MA 02115, USA
Journal: Journal of virology, 1994, 68 (6) 3512-3526
Language: English

... to examine the spatial organization of these structures within the cell nucleus. Confocal microscopy and **three - dimensional** computer **graphics** reconstruction of **optical** series through infected cells indicated that viral DNA replication structures extend through the interior

of...

30/3,K/23 (Item 1 from file: 370)
DIALOG(R)File 370:Science

00510258
Reconstructing Three- Dimensional Images
Science Vol. 284 No. 5423 pp. 2053d
Publication Date: 06/25/1999 (990625) Publication Year: 1999
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: This Week in Science
Word Count: 122

Summary: Many fields take advantage of two-dimensional **optical** imaging to record data, but in many cases it would be more useful to **image** the object in **three dimensions** . Most methods with this capability require a point-by-point scanning of the object or illumination with coherent light (lasers) as in holography. **Marks** et al. (p. 2164; see the news story by Radov) describe a method that uses...

...light scattered from each point on the object contribute to the total intensity at each **pixel** , as measured on a two-dimensional sensor array. By analyzing this mutual intensity function using...

...and algorithms developed for x-ray tomography, the authors were able to reconstruct accurately a **three - dimensional image** of an illuminated object. ...

30/3,K/24 (Item 2 from file: 370)
DIALOG(R)File 370:Science

00510175 (USE 9 FOR FULLTEXT)
Rapid Spine Delivery and Redistribution of AMPA Receptors After Synaptic NMDA Receptor Activation
Shi, Song-Hai; Hayashi, Yasunori; Petralia, Ronald S.; Zaman, Shahid H.; Wenthold, Robert J.; Svoboda, Karel; Malinow, Roberto<CRF RID="C1">
Cold Spring Harbor Laboratory, Cold Spring Harbor, NY 11724, USA.
Laboratory of Neurochemistry, National Institute on Deafness and Other Communication Disorders, National Institutes of Health, Bethesda, MD 20892-4162, USA.
Science Vol. 284 5421 pp. 1811
Publication Date: 6-11-1999 (990611) Publication Year: 1999
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: RESEARCH ARTICLES
Word Count: 3345

(THIS IS THE FULLTEXT)

...Text: colocalized with surface labeling of endogenous GluR2 (Fig. 2D) as well as with a presynaptic **marker** (synapsin 1; Fig. 2D). Whole-cell responses to caged glutamate showed greater rectification in GluR1...
...B21) and examined neurons in organotypic slices 2 to 3 days after infection. High-resolution **optical** stack **images** of dendritic regions revealed that the GluR1-GFP signal was fairly homogeneous (Fig. 3, B...

...3F) and in contrast to the distribution of plain GFP, which displayed numerous spines (Fig. **3D**). To test the effect of synaptic activity on receptor distribution, we placed a small glass...of these spines (17 of 38), the amount of fluorescence at the corresponding location in **images** obtained before a tetanus was near background (B23) (termed "empty" spines, Fig. 4A, arrow a...

...GluR1-GFP included delivery to the surface. We first established a method using TPLSM to **image** surface recombinant receptor in fixed slices (Fig. 3G) (B14) . The distribution and quantification of GluR1...fixed in nonpermeabilizing (NP) or permeabilizing (P) conditions (B14) , stained with antibody to GFP, and **imaged** with filters for GFP (top) or antibody to GFP (Texas Red) (bottom). The same gray scale was used on all **images** . Scale bar, 2 (mu) m. (D) Surface expression of GluR1-GFP. Immunostaining with antibodies to...

...for bottom traces. (B) Expression of GluR1-GFP in pyramidal cells 2 days after infection, **imaged** with TPLSM. Scale bar, 20 (mu) m. (C and D) Apical dendrite of CA1 pyramidal...

...or plainGFP (D, top and bottom). Scale bar, 5 (mu) m. (E) Immuno-electron microscopic **image** of dendrite expressing GluR1-GFP. Postembedding immunolabeling was performed with antibody to GFP (B18) (B19 ...

...stained under nonpermeabilized (left) and permeabilized (right) conditions with antibody to GFP (Texas Red detection). **Images** detected in GFP channel (top) or antibody to GFP channel (bottom). Note immunostaining along dendritic...

...was placed in nearby region (~5 to 10 (mu) m from top left corner, outside **imaged** region). Column 2, region near stimulation electrode (top and middle: two different magnifications of same region) and another region (bottom) **imaged** before tetanus. a and b denote locations of interest. Column 3, same regions **imaged** 30 min after tetanic stimulation. Arrows mark regions a and b in column 2. Column...

...of GluR1-GFP signal intensity of spines before and after tetanus. Spines were identified in **images** obtained 15 min after tetanus. Fluorescence was integrated over two to three **optical** sections containing spine and also from equivalent places before tetanus. Background fluorescence was determined in...

...Figure Removed
Removed

Figure F5
Caption: Tetanic stimulation induces clustering of GluR1-GFP. (A) TPLSM **images** of dendrite before (20 min, left; 10 min, middle) and after (right) tetanic stimulation. Note...

...inf(50%) value indicates cluster formation. (C) Dendrites with clustering have more surface GluR1-GFP. **Images** were taken before and after tetanic stimulation and after immunostaining with antibody to GFP under...Figure F6
Caption: NMDA receptor antagonist reversibly blocks tetanus-induced redistribution of GluR1-GFP. (A) **Images** of apical dendritic segments obtained at different times during experimental period. (Top) In the presence...

30/3,K/25 (Item 3 from file: 370)

00507707 (USE 9 FOR FULLTEXT)
Increased Vascularization in Mice Overexpressing Angiopoietin-1
Suri, Chitra; McClain, Joyce; Thurston, Gavin; McDonald, Donald M.; Zhou, Hao; Oldmixon, Eben H.; Sato, Thomas N.; Yancopoulos, George D.
C. Suri, J. McClain, H. Zhou, G. D. Yancopoulos, Regeneron Pharmaceuticals, 777 Old Saw Mill River Road, Tarrytown, NY 10591, USA. G. Thurston and D. M. McDonald, Department of Anatomy and Cardiovascular Research Institute, University of California, San Francisco, CA 94143, USA. E. H. Oldmixon, Rogers Imaging, Needham, MA 02192, USA. T. N. Sato, University of Texas, Southwestern Medical Center, Dallas, TX 75235, USA.
Science Vol. 282 5388 pp. 468
Publication Date: 10-16-1998 (981016) Publication Year: 1998
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Reports
Word Count: 2413

(THIS IS THE FULLTEXT)

...Text: ear consistently contained prominently enlarged venules that were abnormally shaped because of vascular varicosities (Fig. **3D** , inset). Such characteristic regional differences in Ang1 action may be due to interactions with other...

...Histological sections of skin, which were stained immunohistochemically for the endothelial cell-specific **marker** PECAM (platelet and endothelial cell adhesion molecule), also showed more numerous (Fig. 3, E to...

...J) vessels in adult transgenic mice in comparison to their wild-type littermates, as did **three - dimensional** reconstructions that were derived from **optical** sectioning of tissue examined en bloc (Fig. 3, K and L). A quantitative analysis of...of the epidermis (arrow) and hair follicles (bracket) are indicated; bottom panels depict dark-field **images** after in situ hybridization...Figure Removed

Figure F3
Caption: Two-and **three - dimensional** visualizations of the microvessels in adult Ang1 transgenic and control mice. (A and B) Whole...

...and F) Histological sections of skin, which were stained immunohistochemically for the endothelial cell-specific **marker** PECAM (B10) , show hypervascularity in the transgenic mice; arrowheads denote typical vessels. (G and H...
...microvessels in control mice) have visible lumens; arrowheads denote vessel cross sections. (K and L) **Three - dimensional** computer reconstructions of typical vessel patterns in dorsal skin samples that were stained with the fluorescent dye lucifer yellow and examined as a whole by **optical** sectioning (B26) (B27) . (M and N) Ultrastructural analysis with Zeiss EM10 transmission electron microscopy reveals...

30/3,K/26 (Item 4 from file: 370)

00506936 (USE 9 FOR FULLTEXT)
MICROSCOPY: Molecular Imaging Beats Limits of Light
van den Berg, Rob
Science Vol. 281 No. 5377 pp. 629
Publication Date: 07/31/1998 (980731) Publication Year: 1998
Document Type: Journal ISSN: 0036-8075
Language: English
Word Count: 548

(THIS IS THE FULLTEXT)

...Text: for example, label genes with different fluorescent molecules, then determine the precise positions of these **marker** molecules to learn, say, how the DNA twists and coils. Kohler and his colleagues, says Niek van Hulst of the University of Twente in the Netherlands, 'are pushing **optical** microscopy to its limits.'

Rob van den Berg is a science writer in Leiden.

30/3,K/27 (Item 5 from file: 370)
DIALOG(R)File 370:Science

00506459 (USE 9 FOR FULLTEXT)
Close Contacts with the Endoplasmic Reticulum as Determinants of Mitochondrial Ca.sup(2+) Responses
Rizzuto, Rosario; Pinton, Paolo; Carrington, Walter; Fay, Frederic S.; Fogarty, Kevin E.; Lifshitz, Lawrence M.; Tuft, Richard A.; Pozzan, Tullio
R. Rizzuto, P. Pinton, T. Pozzan, Department of Biomedical Sciences and the National Research Council Center for the Study of Biomembranes, University of Padova, Via Colombo 3, 35121 Padova, Italy. ; W. Carrington, F. S. Fay, K. E. Fogarty, L. M. Lifshitz, R. A. Tuft, Biomedical Imaging Group, University of Massachusetts Medical Center, Worcester, MA 01605, USA.
Science Vol. 280 5370 pp. 1763
Publication Date: 6-12-1998 (980612) Publication Year: 1998
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Reports
Word Count: 1873

(THIS IS THE FULLTEXT)
...Text: B6) in HeLa cells (B7) and used a high-speed imaging system that allows a **three - dimensional** (**3D**) fluorescence **image** of high resolution to be obtained from computationally deblurred **optical** sections (B8) . The **3D images** , derived from **image** stacks taken at 30-s intervals with a 60 x objective (**pixel** size 133 nm), revealed that mitochondria form a largely interconnected "tubular" network that undergoes continuous...

...B10) (Fig. 1D). Domains of close apposition were evident in Fig. 1D and in similar **images** . From these data, the surface of the mitochondrial network in close apposition to the ER...

...immunocytochemical stain (B13) (Fig. 2A) and by results of dual-labeling experiments with the mitochondrial **marker** cytochrome c

oxidase (B14) . The MIMS location of aequorin was confirmed by the characteristics of...Figure F1
Caption: High-resolution **3D** imaging of mitochondria and ER. (A) Time-lapse **3D** imaging of mitochondrial structure in a HeLa cell transiently expressing mtGFP (each **image** was taken 30 s apart). Transfection, **image** acquisition (with a 60 x objective), and processing were done as described (B7) (B8) . (B) A **3D** **image** of mitochondria, taken with a 100 x objective; all other experimental conditions as in (A ...

...Recovery of mtGFP fluorescence after photobleaching; experimental conditions as in (A). The first and second **image** were taken immediately before and after photobleaching mtGFP fluorescence in a small area within the cell. The following three **images** were taken at 2-min intervals after and the final **image** 30 min after the photobleaching. (D) Combined **3D** imaging of mitochondria and ER in a HeLa cell transiently expressing mtGFP(Y66H,Y145F) and erGFP(S65T). The two **3D** images were processed as in (A) and superimposed. The mitochondrial and ER **images** are represented in red and green, respectively; the overlaps of the two **images** are white. On the bottom, a detail of the main **image** (80-nm **pixel**).

30/3,K/28 (Item 6 from file: 370)
DIALOG(R)File 370:Science

00504878 (USE 9 FOR FULLTEXT)
Absence of a Spin Gap in the Superconducting Ladder Compound Sr.inf(2)Ca.inf(12)Cu.inf(24)O.inf(41)
Mayaffre, H.; Auban-Senzier, P.; Nardone, M.; Jerome, D.; Poilblanc, D.; Bourbonnais, C.; Ammerahl, U.; Dhalenne, G.; Revcolevschi, A.
H. Mayaffre, P. Auban-Senzier, M. Nardone, D. Jerome, Laboratoire de Physique des Solides URA 002 (associe au CNRS), Universite Paris-Sud, 91405 Orsay, France. ; D. Poilblanc, Laboratoire de Physique Quantique UMR 5626 (associe au CNRS), Universite Paul Sabatier, 31062 Toulouse, France. ; C. Bourbonnais, Centre de Recherche en Physique du Solide, Departement de Physique, Universite de Sherbrooke, Sherbrooke, Quebec, Canada J1K2R1. ; U. Ammerahl, Laboratoire de Chimie des Solides, URA 446 (associe au CNRS), Universite Paris-Sud, 91405 Orsay, France, and II Physikalisches Institut, Universitaet zu Koln, Zuelpicher Strasse 77 D-50937 Koln, Germany. ; G. Dhalenne and A. Revcolevschi, Laboratoire de Chimie des Solides, URA 446 (associe au CNRS), Universite Paris-Sud, 91405 Orsay, France.
Science Vol. 279 5349 pp. 345
Publication Date: 1-16-1998 (980116) Publication Year: 1998
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Research Articles
Word Count: 3616

(THIS IS THE FULLTEXT)

...Text: dominant d-wave-like SC pairing correlations (B13) (B14) that could possibly materialize into a **3D** SC state at low T. In addition, the numerical investigation of the complete phase diagram...

... **Optical** conductivity measurements of Sr.inf(14-)....crystal, several centimeters long, grown by the traveling solvent floating zone method in an infrared **image** furnace under an oxygen P of 13 bar (B19...

...below (B22) , the narrow signal has been used as a sensitive in situ magnetic field **marker** .

...ladders could correlate with the size of the spin gap (B28) . This finding suggests a **picture** of hole pairs being responsible for the conduction within the ladders as long as the...the existence of such a transition can easily be understood from a weakly interacting band **picture** (B32) . Indeed, for hole density n.inf(h).inf( )>= 0.5, the higher energy antibonding band becomes unoccupied, and one recovers a single band **picture** analogous to the single-chain case. However, the line n.inf(h).inf( )= 0.5...

30/3,K/29 (Item 7 from file: 370)

00504397 (USE 9 FOR FULLTEXT)
Nearly Singular Magnetic Fluctuations in the Normal State of a High-T.inf(c) Cuprate Superconductor
Aeppli, G.; Mason, T. E.; Hayden, S. M.; Mook, H. A.; Kulda, J.
G. Aeppli, NEC Research Institute, 4 Independence Way, Princeton, NJ 08540, USA, and Risø National Laboratory, 4000 Roskilde, Denmark. ; T. E. Mason, Department of Physics, University of Toronto, Toronto, Canada, M5S 1A7 and Risø National Laboratory, 4000 Roskilde, Denmark. ; S. M. Hayden, Department of Physics, University of Bristol, Bristol BS8 1TL, UK. ; H. A. Mook, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA. ; J. Kulda, Institut Laue-Langevin, BP 156X, Grenoble Cedex, France.
Science Vol. 278 5342 pp. 1432
Publication Date: 11-21-1997 (971121) Publication Year: 1997
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Reports
Word Count: 3596

(THIS IS THE FULLTEXT)

...Text: dependent conductivity (final-sigma) ((omega) ,T) (where (omega) is frequency), probed in electrical, microwave, and **optical** experiments. In particular, there is little evidence for magnetic behavior that is as nearly singular...the upper left of Fig. 4 shows such a phase space where the solid circle **marks** the QCP. As for ordinary critical points, the parameter defining the state of the system anywhere in the **three - dimensional** (**3D**) phase space is the inverse coherence length (kappa) . For a fixed composition, such as our...

...length (kappa) .inf(0) when T --> 0 and (omega) --> 0. If we add to the **graphic** description of the inset in Fig. 4 the assumption of a Euclidean metric for measuring...

...on the high-T.inf(c) materials can be thought of as travels through a **3D** phase space such as that depicted in Fig. 1A, and the changes in behavior found...

...the lowest T, the superconducting instability dominates. The knowledge that the cuprates inhabit an interesting **3D** phase space, together with our ...depends on (kappa) = (kappa) ((omega) = 0,T). The inset in the upper left shows the **3D** space defined by (omega) ,T, and a composition-dependent control parameter a. The dark plane...

30/3,K/30 (Item 8 from file: 370)
DIALOG(R)File 370:Science

00500722 (USE 9 FOR FULLTEXT)
Dynamics of Ongoing Activity: Explanation of the Large Variability in Evoked Cortical Responses
Arieli, Amos; Sterkin, Alexander; Grinvald, Amiram; Aertsen, Ad
Department of Neurobiology, Weizmann Institute of Science, Post Office Box 26, Rehovot 76100, Israel.
Science Vol. 273 5283 pp. 1868
Publication Date: 9-27-1996 (960927) Publication Year: 1996
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Reports
Word Count: 2754

(THIS IS THE FULLTEXT)

...Text: B10) . Activity was measured in the visual cortex (areas 17 and 18), combining real-time **optical** imaging and electrophysiological recordings. A 2-mm-square area of primary visual cortex, stained with the voltage-sensitive dye RH795, was **imaged** onto a 12 x 12 array of photodiodes. Simultaneously, spike discharges of two isolated neurons... ...the local field potential (LFP) were recorded from a microelectrode inserted into the exposed area. **Optical** and electrical signals were continuously sampled every 3.5 ms for periods of 70 s...

...Real-time **optical** imaging with the use of voltage-sensitive dyes measures, at millisecond time resolution, the membrane...

...to which individual cortical response patterns are influenced by the instantaneous network state. Optically recorded **images** together with traces of the simultaneously recorded LFP and spike trains are shown in Fig ...

...for two responses to a repeated visual stimulus. The large variability revealed in the optically **imaged** responses resembles the well-known variability in the LFP and single-neuron recordings. The fact...

...from six cats, each session containing 34 trials). The correlation was not restricted to the **optical** recordings, but held for the electrophysiological recordings as well. Indeed, the initial state was significantly...

...they reflect different aspects of cortical activity and different resolutions in space and time. The **optical** signal reflects localized changes in membrane potential, ...of the microelectrode (B15) . In the simplest approximation, the LFP is the derivative of the **optical** signal. However, both signals are continuous waves that reflect the activity of thousands of neurons...

...trial are caused by the fluctuating ongoing activity. This view is expressed in a simplified **model** (Fig. **3** A) in which an individual response is the sum of two components: the reproducible response...

...shown in Fig. 4 A for three consecutive trials in a recording session, examining the **images** obtained 28 ms after response onset. Note that the predictions for different trials vary only...individual responses (a and b)

to a repeated visual stimulus [bottom trace in (B)]: The **images** (1a,b) show the activity in a 2 mm by 2 mm area of cortex...

...a fractional change of ~5 x 10.sup(-5)). The small square in the first **image marks** the site, above the microelectrode, from which the **optical** traces (2a,b) were taken. Note the large variability in the evoked response, also reflected...

...LFP (3a,b) and single-neuron spike trains (4a,b), both recorded simultaneously with the **optical** signals. The absence of slow components in the LFP is due to high-pass filtering above 3 Hz. (B) Average evoked response: The **optical images** and signals, LFP, and single-unit activity were averaged, triggered on the onset of 34...

...coefficient R = 0.9). (B) Correlation coefficients [as in (A)] for all sites in the **imaged** cortical area. The arrow **marks** the site, selected in (A). The statistical significance of correlation is indicated by color. (C...

...predicted and measured responses. (Top trace) Averaged evoked response (34 trials), measured from a single **optical** channel above the microelectrode site (small square in top-left frame). (First row) Averaged evoked...0 and the ongoing activity before stimulus onset. After calculating the correlation coefficient for each **pixel** in the matrix at a certain delay, we simply summed all the **pixels** (because we did not see any consistent temporal differences between the different **pixels**). The insets in (B) and (C) show the correlations over prolonged time...

30/3,K/31 (Item 9 from file: 370)
DIALOG(R)File 370:Science

00500590 (USE 9 FOR FULLTEXT)
Visualization of Slow Axonal Transport in Vivo
Terada, Sumio; Nakata, Takao; Peterson, Alan C.; Hirokawa, Nobutaka
S. Terada, Institute for Brain Research, Faculty of Medicine, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113, Japan. ; T. Nakata, Department of Anatomy and Cell Biology, Faculty of Medicine, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113, Japan. ; A. C. Peterson, Molecular Oncology Group, McGill University, H5-35, 687 Pine Avenue West, Montreal, Quebec H3A 1A1, Canada. ; N. Hirokawa, Institute for Brain Research and Department of Anatomy and Cell Biology, Faculty of Medicine, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113, Japan.
Science Vol. 273 5276 pp. 784
Publication Date: 8-09-1996 (960809) Publication Year: 1996
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Reports
Word Count: 2736

(THIS IS THE FULLTEXT)

...Text: Also, it was transported into sciatic nerve axons and in some, when analyzed by serial **optical** sectioning, labeled protein was continuously detectable from the DRG cell body to the leading edge...

...used only paraformaldehyde fixative. Successful staining was confirmed by analysis of confocal laser scanning microscope **images** in which reconstructed cross sections of axons showed uniform and continuous

labeling. At 5 days...B17) . We could not detect any labeling in Schwann cells; even in reconstituted cross-sectional **images** of nerve fibers, the fluorescence was detected only in axons, and the concentric circular or...

...grains were located preferentially along or immediately adjacent to microtubules (cross-sectional view in Fig. **3D**). Silver grain density was significantly higher within 50 nm of microtubules (Poisson distribution test, P...44A transgenic mice infected with AxCA-NT-NFMmyc in vivo. (A) Differential interference contrast (DIC) **image** of a DRG infected with vector containing viruses. (B) Characteristic filamentous distribution pattern of transgene...

...same specimen as shown in (A). Two of three DRG neurons shown in the DIC **image** are infected with vectors. Scale bars in (A) and (B), 10 (mu) m. (C) Cell...
...above or below the plane of the tissue section by analyzing consecutive reconstructed cross-sectional **images** calculated with confocal laser scanning microscopy. (D) Day 7 after infection. The synchronous termination of...

...2 was blotted with antibody to neurofilament M. Bars on the left indicate molecular mass **markers** of 200, 116, 97, 66, and 45 kDa (from the top down), and the arrowhead...through (H) because osmification was found to dissolve silver grains. Note the difference between the **images** enhanced by tannic acid and the **image** of the conventional specimen (A).] (C) Cross-sectional **image** of an axon devoid of neurofilament polymers, revealing tagged unpolymerized proteins traveling down the axon...

30/3,K/32 (Item 10 from file: 370)

00500563 (USE 9 FOR FULLTEXT)
Four-Dimensional Imaging: Computer Visualization of 3D Movements in Living Specimens
Thomas, C.; DeVries, P.; Hardin, J.; White, J.
C. Thomas, P. DeVries, and J. White are with the Integrated Microscopy Resource for Biomedical Research (IMR), University of Wisconsin, Madison, WI 53706, USA. J. Hardin is in the Department of Zoology, University of Wisconsin, Madison, WI 53706, USA.
Science Vol. 273 5275 pp. 603
Publication Date: 8-02-1996 (960802) Publication Year: 1996
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Articles
Word Count: 4365

(THIS IS THE FULLTEXT)

...Text: to select the top and bottom focal planes of the sample by means of a **graphic** interface to the microscope focus control. After moving through the sample and **marking** the top and bottom, the user then specifies either the number of focal planes to...
...prompted for a file name, for a location on the hard drive to store the **images** , and for an **image** file format to use when saving the **images** . Currently, the software supports TIFF, PICT, and PICS file formats. The **images** are initially stored uncompressed (to allow access to the unaltered data if quantization is required...

...the software automatically moves the microscope focus through the specified volume, digitally sampling and storing **images** of each focal plane. Each time-point file contains a stack of **images** representing the **3D** structure of the sample (Fig. 3). During the interval between time points, the illumination shutter...

...The 4D Acquisition system can be used to record data from any **optical** sectioning microscope that can provide a video output. For Nomarski microscopy, we reduce any residual...

...B13) . We have found that cleaning up the signal in this way allows the digital **image** to be compressed up to an additional 25% while maintaining equivalent **image** fidelity. For confocal or multiple-photon **images** , we use simple macros (written in Bio-Rad 600 SOM software) to collect 4D data ...
...Data compression and turnaround. It is not unusual to generate several thousand **images** , occupying a gigabyte or more of hard disk space, from a single 4D data acquisition...

...we developed the 4D Turnaround program. The 4D Turnaround application (B14) takes raw 2D or **3D** time points and converts them to a Quicktime movie or set of movies...

...Quicktime is a system extension (Apple Computer, Inc.) that allows sequences of **images** to be viewed as a movie (a series of animated frames) on the computer screen...

...the common computer platforms. Quicktime also supports a number of built-in and add-on **image** compression schemes, including JPEG...

...data set. The software recognizes files in TIFF, PICT, PICS, and Bio-Rad's PIC **image** formats. After opening the first stack of **images** , the user is prompted for the number of time points to be converted and which...

...are supported with most of these compression schemes, so that the optimum trade-off between **image** quality and data set size can be specified. We have found that the JPEG algorithms give the best results for Nomarski **images** .
...

...separate Quicktime movie file for each focal plane in the first time point, compresses the **image** information from each focal plane and places it into its respective movie. The program processes...either the specified frame rate or one frame at a time. A slider on the **image** window allows quick access to distant time points, and a "go to" function allows the...

...When moving through a volume of thousands of **images** , it is frequently useful to place a few "bookmarks" to provide instant access to specific...

...of the 4D Viewer software is the ability to create color overlays for the individual **images** in the data set. Tools are provided to create circles, squares, straight lines, freehand lines...

...arrows, in various sizes and colors; any or all of these can overlay the microscope **images** as they are viewed by the user (Fig. 1). Features of interest in sequential **images** in the data set can thus be highlighted by dynamic color overlays that will follow...
...These overlaid dynamic annotations are not made a permanent component of the original **image** ; they may be added, deleted, or edited at any time by

means of a set...

...in computer drawing programs. Other application-specific tools facilitate the transfer of labels to sequential **images** . Overlays are stored as objects in a separate disk file distinct from the **image** data. The use of object coding rather than bit-mapped coding means that overlays take...

30/3,K/33 (Item 1 from file: 608)
DIALOG(R)File 608:KR/T Bus.News.

06658321 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Texas Instruments Markets New Chip as Theater Gold Standard
Alan Goldstein
Dallas Morning News
April 30, 1999
DOCUMENT TYPE: NEWSPAPER RECORD TYPE: FULLTEXT LANGUAGE: ENGLISH
WORD COUNT: 1219

...TEXT: s digital micromirror device is a thumbnail-size chip capable of reproducing brilliant, crystal-clear **images** . It reflects light off a shiny surface that is jam-packed with hundreds of thousands...

...and manager of the digital imaging division. But watching sports or using a high-definition **image** to conduct a video conference with faraway family members can be truly compelling, he said...

...Development began in earnest soon afterward. TI pursued numerous "blind alleys," Mr. England said, from **image** analysis for the military to high-end digital printing.
In recent years, TI has found...
...a DMD and related chips, accounts for about 30 percent of the cost of a $ **3** ,000 projector. **Models** from manufacturers such as InFocus have a TI logo on their exterior, in a marketing...

...generally use traditional liquid crystal display technology. TI's advantage is most apparent with moving **images** because LCDs suffer from a lag time, Mr. Kayye said. But LCD technology is continuously being improved, he added.
"We believe DMD will produce a superior **image** to LCD at any cost," said Mr. England. But he added that performance, not the...

...TI engineers tweaked the chip by reducing the spacing between the little mirrors, improving the **image** .
"Today, what you hear from the heavies is, 'This is film-like quality,' " Mr. Horsley...

...a movie could be distributed via satellite. Alternatively, a movie could be burned onto plastic **optical** disks, which would still offer significant savings in both production and distribution.
Digital distribution can...

...to more consistent quality. Films are subject to deterioration, which becomes evident through scratches, dust **marks** and popping sounds that are common on most prints after as few as 30 showings...

...about marketing TI technology. If movie audiences know that TI projectors produce the best possible **image** on a screen, the executives

said,

30/3,K/34 (Item 2 from file: 608)
DIALOG(R)File 608:KR/T Bus.News.

06654460 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Texas Instruments' New Chip Provides Sharper Cinema Images
Alan Goldstein
Dallas Morning News
April 17, 1999
DOCUMENT TYPE: NEWSPAPER RECORD TYPE: FULLTEXT LANGUAGE: ENGLISH
WORD COUNT: 1214

...TEXT: s digital micromirror device is a thumbnail-size chip capable of reproducing brilliant, crystal-clear **images** . It reflects light off a shiny surface that is jam-packed with hundreds of thousands...

...and manager of the digital imaging division. But watching sports or using a high-definition **image** to conduct a video conference with faraway family members can be truly compelling, he said...

...Development began in earnest soon afterward. TI pursued numerous "blind alleys," Mr. England said, from **image** analysis for the military to high-end digital printing.
In recent years, TI has found...
...a DMD and related chips, accounts for about 30 percent of the cost of a $ **3** ,000 projector. **Models** from manufacturers such as InFocus have a TI logo on their exterior, in a marketing...

...generally use traditional liquid crystal display technology. TI's advantage is most apparent with moving **images** because LCDs suffer from a lag time, Mr. Kayye said. But LCD technology is continuously being improved, he added.
"We believe DMD will produce a superior **image** to LCD at any cost," said Mr. England. But he added that performance, not the...

...TI engineers tweaked the chip by reducing the spacing between the little mirrors, improving the **image** .
"Today, what you hear from the heavies is, This is film-like quality,'" Mr. Horsley...

...a movie could be distributed via satellite. Alternatively, a movie could be burned onto plastic **optical** disks, which would still offer significant savings in both production and distribution.
Digital distribution can...

...to more consistent quality. Films are subject to deterioration, which becomes evident through scratches, dust **marks** and popping sounds that are common on most prints after as few as 30 showings...

...about marketing TI technology. If movie audiences know that TI projectors produce the best possible **image** on a screen, the executives said,

30/3,K/35 (Item 3 from file: 608)
DIALOG(R)File 608:KR/T Bus.News.

06588263 (USE FORMAT 7 OR 9 FOR FULLTEXT)
Richmond Times-Dispatch, Va., Business Briefs Column
Richmond Times-Dispatch Va
September 14, 1998
DOCUMENT TYPE: NEWSPAPER RECORD TYPE: FULLTEXT LANGUAGE: ENGLISH
WORD COUNT: 1548

...TEXT: is systems administrator and will work on studio projects. He had been a free-lance **graphic** designer.
-- Dawn Meade is an administrative assistant. She is a graduate of Virginia Tech.
Siddall...

...has been with General Electric since 1995.
LAW: Donna L. Konseck has joined Sands Anderson **Marks** & Miller as director of information systems. She had been systems administrator at Wright, Robinson, Osthimer & Tatum.
MANUFACTURING: Christian Seifert has been named product manager, spectacle lenses, at Carl Zeiss **Optical** Inc. in Petersburg. He will be responsible for the introduction and promotion of lens and...magazines.
Keith Williams has joined the creative staff at Edit Design. He will work in **graphic** design, visual effects, **photography** and Web site design and development. He had been technical director and production manager at Pyramid Studios.
Bobby Holliday has joined Presentation Resource Inc. as a **graphic** designer specializing in **three - dimensional** and two- **dimensional** design and animation. He had worked for The Cerebellum Corp. in Northern Virginia.
NONPROFIT ORGANIZATIONS...

...Barrett, director of human resources and training at Peoples, have completed the final section of **three** -year tax **representation** program by the National Tax Practice Institute. The institute is sponsored by the National Association...

...the company, the most recent previous title, and the year the person joined the company. **Pictures** are welcome, but their use depends on available space. **Photographs** will not be returned. Send information to: Business Briefs, Metro Business, the Richmond Times-Dispatch...

30/3,K/36 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

05188185 Supplier Number: 47916900 (USE FORMAT 7 FOR FULLTEXT)
Visualizing microstructures in 3-D
Industry Week, p147
August 18, 1997
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 102

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
AN EXPERIMENTAL TECHNIQUE OFfers researchers the advantage of visualizing the true **three - dimensional** nature of microstructures, says scientist George Spanos at the Naval Research Laboratory's Materials Science...

...incremental polishing through a thin layer of material, chemically

etching the polished surface, applying reference **marks** , and performing **optical** or scanning electron microscopy on selected areas, Spanosexplains. After computer-aided registry to properly align the micrographs from each section, the series of **images** are viewed as video sequences that "step through" the material slice-by-slice, and as **three - dimensional** reconstructions using advanced computer visualization.

30/3,K/37 (Item 1 from file: 160)
DIALOG(R)File 160:Gale Group PROMT(R)

02093192
LI Firms Fusing Together?
Newsday January 4, 1989 p. 37,41

. **Marks** Polarized (Deer Park, NY) may be acquired by Geotel (Hauppauge, NY). **Marks** Polarized designs and makes **optical** filters for aerospace electronic equipment. The company has been seeking a to finance the development of its nightvision goggle product line through a merger since 1986. **Marks** had been in the **three dimensional** motion **picture** projector and viewing glasses business. Its main product line is currently polarizing filters used to...

...private customers. The company is headed by RJ Sanator, a former pres of Fairchild Republic. **Marks** Polarized's operations will be moved to Hauppauge following the completion of the deal.
...

30/3,K/38 (Item 1 from file: 80)
DIALOG(R)File 80:TGG Aerospace/Def.Mkts(R)

01252076 Supplier Number: 42214252 (USE FORMAT 7 FOR FULLTEXT)
NASA denys replacing Eosat environmental change instrument...
Space Commerce Week, pN/A
July 12, 1991
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 43359

... Motion - 6 DOF Remarks - Plus rear crew cabin trainer @@@42454962X 0UMIJTv Hughes Aircraft Co., Electro- **Optical** and Data Systems Group, El Segundo, Calif. -- $25.9 million for discrimination experiment fly-along...

...One has involved the Single Channel Ground and Airborne Radio System, known as SINCGARS. A **third** generation **model** featuring low power usage is being developed by ITT Defense. SINCGARS ...of view. The sensor measures more than 3-by-6-by-2 inches. A plexiglass **optical** element collects the light from the wide field of view, sending a signal to an...

...for the battlefield of the future. The list includes battlefield surveillance systems; real-time intelligence/ **imagery** systems; automated reliability and validity checks of intelligence material; automated target identification and engagement priority...

30/3,K/39 (Item 1 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2003 The Gale Group. All rts. reserv.

05119982 SUPPLIER NUMBER: 09354502 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Materials handbook for refractories, traditional & advanced ceramics. (acid through lusters; part 1)
Ceramic Industry, v136, n1, p25(38)
Jan, 1991
ISSN: 0009-0220 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 112484 LINE COUNT: 09304

... a sintering aid in class II capacitor compositions.
BISMUTH ZIRCONATE. [2Bi.sub.2.O.sub. **3** !.[3ZrO.sub.2. Used to depress Curie peak of barium titanate. Also used to help...as grinding of ferrous metals.
BORON PHOSPHIDE. BP. Electroluminescent material having unusual combination of electrical, **optical** , thermal and mechanical properties. Both p and n types have been studied.
BORON TRIBROMIDE. [BBr...yellow, but other oxides are normally chosen for commercial ware except in the case of **optical** filters. An opal yellow, however, for melting at 2400[degrees!F, has this composition (in...

...micrometer! wavelength region. Cadmium telluride shows promise for high-temperature rectifiers, solar batteries and infrared **optical** systems.
CADMIUM TUNGSTATE. [CdWO.sub.4!. Mol. wt. 360.41. Yellow crystals slightly soluble in...

30/3,K/40 (Item 1 from file: 674)
DIALOG(R)File 674:Computer News Fulltext
(c) 2003 IDG Communications. All rts. reserv.

049110
DMSs getting mix-and-match wardrobe
New standard promises to make document management system parts interchangeable, but integrators will stay busy for a while.
Byline: Linda Musthaler
Journal: Network World Page Number: 38
Publication Date: January 08, 1996
Word Count: 2089 Line Count: 190

Text:
... Content Architecture and Rich Format Text as well as proprietary word processing, spreadsheet and presentation **graphic** file formats. In addition, many DMS products suppport standard **image** , digitized audio and video file formats. The DMS applications doing all this document and file ...

... to make sure that all versions of it are completely removed, as opposed to simply **marking** them inaccessible, which occurs with the DELETE command of most desktop operating systems. A DMS...

... off-line or near-line storage management system such as a tape drive or an **optical** storage jukebox. Many DMS products support a hierarchical storage management system, which automatically migrates less...products give a thumbnail view of the documents, XSoft's Visual Recall has a unique **three - dimensional graphical** display that can point out trends or relationships between documents based on their attributes. Access Corp.'s Cimage Document Manager supports a unique **graphical** hypertext link to

other related documents. For instance, someone viewing a processing plant drawing can...

... together compound documents comprising individual objects. This object orientation enables such objects as diagrams or **graphics** to be stored once but used in many documents. Products such as Documentum, Inc.'s...

30/3,K/41 (Item 1 from file: 696)

00671068
MATSUSHITA AND IBM JOIN NINTENDO IN NEW CONSOLE
CONSUMER MULTIMEDIA REPORT
May 17, 1999 DOCUMENT TYPE: NEWSLETTER
PUBLISHER: WARREN PUBLISHING INC.
LANGUAGE: ENGLISH WORD COUNT: 1468 RECORD TYPE: FULLTEXT

TEXT:
...feature IBM's 0.18 micron copper technology. Companion chip for Dolphin is 200 MHz **graphic** processor being developed by Palo Alto, Cal.-based ArtX, founded by former Silicon **Graphics** engineers who help design Nintendo's current N64 machine. Gekko chip will be made at...

...Dolphin will be developed by Matsushita, which also will perform software replication for system. Move **marks** first use of **optical** disc medium and outsourced production by Nintendo, which long has championed ROM cartridges and performed...
...said new Matsushita technology will incorporate specific antipiracy elements, which he refused to detail.

Dolphin **marks** Matsushita's reentry into videogame market. Company was one of original hardware licensees for 3DO...characters. Players then can take cartridge to 4,500 participating Blockbuster stores to get those **images** converted into stickers. While Snap and Pokemon Stadium will mark Pokemon's debut on N64...

...1: The Phantom Menace, Parrapa the Rapper sequel Um Jammer Lammy, Final Fantasy VIII, PacMan **3D** . Sony is expected to cut PlayStation hardware price to $100 by Sept but hadn't...E3 saw number of strong PC games including Quake III Arena, Daikatana, Prince of Persia **3D** . Most titles continued to be CD-ROM despite growing installed base of DVD-ROM hardware...feature IBM's 0.18 micron copper technology. Companion chip for Dolphin is 200 MHz **graphic** processor being developed by Palo Alto, Cal.-based ArtX, founded by former Silicon **Graphics** engineers who help design Nintendo's current N64 machine. Gekko chip will be made at...
...Dolphin will be developed by Matsushita, which also will perform software replication for system. Move **marks** first use of **optical** disc medium and outsourced production by Nintendo, which long has championed ROM cartridges and performed...

...said new Matsushita technology will incorporate specific antipiracy elements, which he refused to detail.

Dolphin **marks** Matsushita's reentry into videogame market. Company was one of original hardware licensees for 3DO...characters. Players then can take cartridge to 4,500 participating Blockbuster stores to get those **images** converted into stickers. While Snap and Pokemon Stadium will mark Pokemon's debut on N64...

...1: The Phantom Menace, Parrapa the Rapper sequel Um Jammer Lammy, Final Fantasy VIII, PacMan **3D** . Sony is expected to cut PlayStation hardware price to $100 by Sept but hadn't...E3 saw number of strong PC games including Quake III Arena, Daikatana, Prince of Persia **3D** . Most titles continued to be CD-ROM despite growing installed base of DVD-ROM hardware... ?

33/3,K/1 (Item 1 from file: 88)
DIALOG(R)File 88:Gale Group Business A.R.T.S.

05651831 SUPPLIER NUMBER: 69553278
The Effect of Learned Perceptual Associations on Visuomotor Programming Varies with Kinematic Demands.
Haffenden, Angela M.; Goodale, Melvyn A.
Journal of Cognitive Neuroscience, 12, 6, 950
Nov, 2000
ISSN: 0898-929X LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 11909 LINE COUNT: 00930

... differences were significant.
In Experiment 1, the target objects were always presented in the same **location** and **orientation** , and they were all the same shape. Because the blocks were always presented in the...

...come to learn that block size could be judged quite well based simply on retinal **image** size. Blocks projecting large retinal **image** sizes were always large; they never represented smaller blocks that had been moved closer to...

...trial. Simply put, relying on learned perceptual information could diminish the need for real-size **calculations** and therefore, would have the potential to increase the efficiency of the visually guided movement...

...routine in situations where the shapes of the target objects were inconsistent, as different hand **postures** could be required from trial to trial.
EXPERIMENT 2: A SHAPE CUE TO SIZE
Color...

33/3,K/2 (Item 1 from file: 636)
DIALOG(R)File 636:Gale Group Newsletter DB(TM)

01057253 Supplier Number: 40592164 (USE FORMAT 7 FOR FULLTEXT)
NEURAL NETWORKS
Sensor Technology, v4, n12, pN/A
Dec, 1988
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 854

... can sort through immense quantities of information and pick out patterns from (i.e., make **sense** of) the data. This capability, for example, is exactly what has been needed in vision...

...a robot to vary its behavior based on its own experience. During training, stereo cameras **sense** the **location** and **orientation** of an object at a series of robot **postures** and generate a pattern of signals. From hundreds of these signals, the neural network begins...

...way of robots will walk over rough, unpredictable terrain, or lift loads of unknown weight. **Image** recognition, of course, has even broader implications, involving NDT, inspection, and so on. Signal processing...

33/3,K/3 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

15189866 PASCAL No.: 01-0355021
Tracking of multi-state hand models using particle filtering and a hierarchy of multi-scale image features
Scale-space and morphology in computer vision : Vancouver, 7-8 July 2001
LAPTEV Ivan; LINDEBERG Tony
KERCKHOVE Michael, ed
Computational Vision and Active Perception Laboratory (CVAP) Department of Numerical Analysis and Computer Science KTH, 100 44 Stockholm, Sweden
International conference, scale-space, 3 (Vancouver BC CAN) 2001-07-07
Journal: Lecture notes in computer science, 2001, 2106 63-74
Language: English

... approach for simultaneous tracking and recognition of hierarchical object representations in terms of multi-scale **image** features. A scale-invariant dissimilarity measure is proposed for comparing scale-space features at different...

... the measure over different models and their parameters allows for both model selection and parameter **estimation** . Then, within the framework of particle filtering, we consider the area of hand gesture **analysis** , and present a method for simultaneous tracking and recognition of hand models under variations in the **position** , **orientation** , size and **posture** of the hand. In this way, qualitative hand states and quantitative hand motions can be...

33/3,K/4 (Item 2 from file: 144)
DIALOG(R)File 144:Pascal

14701620 PASCAL No.: 00-0376990
Quantitative in vivo analysis of the kinematics of carpal bones from three-dimensional CT images using a deformable surface model and a three-dimensional matching technique
SNEL Jeroen G; VENEMA Henk W; MOOJEN Thybout M; RITT Marco JPF; GRIMBERGEN Cornelis A; DEN HEETEN Gerard J
Department of Medical Physics, The Academic Medical Center, Amsterdam; Department of Medical Physics and Department of Radiology, The Academic Medical Center, Amsterdam; Department of Reconstructive Plastic and Handsurgery, The Academic Medical Center, Amsterdam; Department of Medical Physics, The Academic Medical Center, Amsterdam; Department of Measurement and Control, Faculty of Mechanical Engineering and Marine Technology, Delft University of Technology; Department of Radiology, The Academic Medical Center, Amsterdam
Journal: Medical physics, 2000-09-20, 27 (9) 2037-2047
Language: English

... Axial helical CT scans were made of the wrists of 11 volunteers. The wrists were **imaged** in the neutral position with a conventional CT technique, and in 15-20 other **postures** (flexion-extension, radial-ulnar deviation) with a low-dose technique. A segmentation of the carpal...

... accurate match of each carpal bone with its counterpart in the regular-dose scan. Accurate **estimates** of the relative **positions** and **orientations** of the carpal bones during flexion and deviation were obtained. This quantification will be especially...

33/3,K/5 (Item 3 from file: 144)
DIALOG(R)File 144:Pascal

14354616 PASCAL No.: 00-0005969
Mirror-directed social behaviors of Garnett's greater bush baby (Otolemur garnettii)
BECKER M L; WATSON S L; WARD J P
Department of Psychology, The University of Memphis, Campus Box 526400, Memphis, Tennessee 38152-6400, United States; Department of Psychology, Jackson State University, Jackson, Mississippi 39217, United States
Journal: International journal of primatology, 1999, 20 (5) 633-650
Language: English

Many diurnal anthropoid species direct social behaviors toward their own mirror- **image** as though viewing a conspecific. To **determine** whether a nocturnal prosimian species would behave similarly, we videotaped social responses of 45 Garnett's greater bush babies (Otolemur garnettii) observing mirror- **images** for the first time, scored them for frequency and duration, and compared them with the...

... the hindfoot, and most when in immediate proximity to the mirror. Bush babies displayed bipedal **posture** and threat gestures when oriented directly toward a mirror from a near **position** . **Orientation** toward the mirror also increased the frequency of arched-back **postures** ; however, this behavior was not contingent on proximity to the mirror or visibility of the mirror- **image** . The differential expression of specific behaviors toward mirror- **images** by male and female bush babies supports the view that this nocturnal prosimian, thought to...

33/3,K/6 (Item 4 from file: 144)
DIALOG(R)File 144:Pascal

12975535 PASCAL No.: 97-0253209
Similarity of friends in three countries : A study of children's drawings
PINTO G; BOMBI A S; CORDIOLI A
University of Florence, Italy; University of Rome, Italy
Journal: International journal of behavioral development, 1997, 20 (3) 453-469
Language: English

... this study we compared children's drawings of themselves with a friend, in order to **determine** whether or not children from different countries introduced the same amount of resemblance between the...

... compares the drawn figures in respect to 4 subscales: (1) Dimensions (width and height); (2) **position** (**posture** and **orientation**); (3) body (shape and colour); and (4) attributes (shape and colour of clothing and

accessories...

... similarity, indicating the universality of this feature of friendship. Instead, some variations emerged in the **graphic** devices used to show similarity between partners by subjects of age, sex, or culture; these...

33/3,K/7 (Item 1 from file: 370)

00508683 (USE 9 FOR FULLTEXT)
Pulmonary Function and Metabolic Physiology of Theropod Dinosaurs
Ruben, John A.; Dal Sasso, Cristiano; Geist, Nicholas R.; Hillenius, Willem J.; Jones, Terry D.; Signore, Marco
J. A. Ruben, N. R. Geist, T. D. Jones, Zoology Department, Oregon State University, Corvallis, Oregon 97331, USA. C. Dal Sasso, Museo Civico di Storia Naturale, Corso Venezia 55, Milano 20121, Italy. W. J. Hillenius, Department of Biology, College of Charleston, Charleston, SC 29424, USA. M. Signore, Department of Geology, University of Bristol, Bristol BS8 1RJ, UK.
Science Vol. 283 5401 pp. 514
Publication Date: 1-22-1999 (990122) Publication Year: 1999
Document Type: Journal ISSN: 0036-8075
Language: English
Section Heading: Reports
Word Count: 1536

(THIS IS THE FULLTEXT)

...Text: Scipionyx appear to be remnants of the diaphragmatic musculature (Figs. 1 and 3) (B12) . The **position** and **orientation** of these fibers resemble some of the posteriormost lateral diaphragmatic muscle fibers in crocodilians (B2...

...unlikely that these fibers in Scipionyx were components of this muscle. Tetrapods with parasagittal limb **posture** , such as theropods, would be unlikely to have had longitudinally oriented flank musculature; such musculature...

...bending of the trunk during locomotion in animals, such as lizards, that have a sprawling **posture** (B13...

...a specialized diaphragm to supplement costal lung ventilation in theropods would seem anomalous. However, recent **analysis** suggests that expansion of lung ventilatory capacity might have allowed the relatively unmodified septate lungs...

...capacities because they appear to have been fully terrestrial and cursorial with habitually upright limb **posture** (B17...

...Figure F1
Caption: Similar body cavity partitioning in two theropods, Scipionyx (top) and Sinosauropteryx (bottom; **image** digitally reversed for purposes of comparison). Anterior is to the right. Arrows indicate the probable...

...and abdominal cavities. Note also the dorsal position of the posterior colon in Scipionyx. The **image** of Scipionyx was recorded under ultraviolet illumination. Abbreviations: c, colon; pc, posterior colon; *, diaphragmatic muscles...

```
File 348:EUROPEAN PATENTS 1978-2003/Jan W05
         (c) 2003 European Patent Office
File 349:PCT FULLTEXT 1979-2002/UB=20030130,UT=20030123
         (c) 2003 WIPO/Univentio
? ds

Set     Items   Description
S1     500172   IMAGE? OR PICTURE? OR GRAPHIC? OR PHOTOS OR PHOTOGRAPH?? OR
              PHOTO
S2      55205   PIXEL? OR PEL OR PICTURE()ELEMENT? OR PICEL?? OR PIXCEL??
S3      41018   3D
S4     143845   (THREE OR THIRD OR 3)(3N)(DIMENSION? OR SHAPE? OR MODEL? OR
              REPRESENTATION? OR SCENE?)
S5     609653   OBJECT??
S6      25395   (POSITION? OR PLACEMENT? OR LOCATION?)(10N)ORIENTATION?
S7       6636   POSTURE?
S8     116884   (MARKER? OR MARKS OR MARKING?)
S9         35   (SENSING OR SENSE OR DETECT? OR DETERMIN? OR ANALY? OR EST-
              IMAT? OR CALCULAT?)(S)S6(S)S7
S10     37149   S1(5N)(REDUC? OR SHRINK? OR COMPRESS?)
S11       455   (PLURAL? OR MANY OR NUMEROUS OR MULTI OR MULTIPLE OR SEVER-
              AL)(3N)SETS(3N)PARAMETER?
S12     54141   CAMERA?
S13      2995   (REGION OR AREA)(3N)EXTRACT?
S14     34787   IC=(G01B? OR B25J? OR G06K?)
S15         2   (S1 OR S2)(S)(S3 OR S4)(S)S9
S16       242   (S1 OR S2)(5N)(S3 OR S4)(10N)S8
S17        24   S14 AND S16
S18        15   S17 NOT AD=19990204:20030131
S19        19   S16(S)S6
S20        17   S19 NOT (S15 OR S17)
S21         5   S20 NOT AD=19990204:20030131
S22         1   S16(S)S13
```

15/3,K/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00767723 **Image available**
METHOD AND APPARATUS FOR THE GENERATION OF COMPUTER GRAPHIC REPRESENTATIONS OF INDIVIDUALS
PROCEDE ET APPAREIL PERMETTANT DE GENERER DES REPRESENTATIONS GRAPHIQUES D'INDIVIDUS PAR ORDINATEUR
Patent Applicant/Inventor:
CRAMPTON Stephen James, 9 Broadfields, Goffs Oak, Waltham Cross, Herts EN7 5JU, GB, GB (Residence), GB (Nationality)
Legal Representative:
BERESFORD Keith Denis Lewis, Beresford & Co., 2-5 Warwick Court, High Holborn, London WC1R 5DJ, GB
Patent and Priority Information (Country, Number, Date):
Patent: WO 200101354 A1 20010104 (WO 0101354)
Application: WO 2000GB2458 20000626 (PCT/WO GB0002458)
Priority Application: GB 9914823 19990624
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 45335

Fulltext Availability:
Claims

Claim
... booth for this
embodiment would therefore comprise instructions on the
four poses to adopt whilst **image** data is captured using
the digital cameras 36 and 38. Thus for example in this...

...camera and
fingers stretched out as shown,
The user instruction program 130 then causes an
image of an individual 46 having the position shown in
Figure 8 to be displayed on...The booth control program 132 then invokes the user
instruction program 130 to cause an **image** of an
individual adopting the pose of Figure 5 to be displayed
on the internal...

...and fingers stretched
out as shown (s23). The booth control program 132 then
causes (s24) **images** of the user standing in the required
position to be taken using the digital cameras...

...Initially the booth control program 132 instructs the
first digital camera 36 to take a **picture** with the flash
lights 56 being activated. This causes the flash 56 to
be activated...

...a second the booth control 132 instructs the second digital camera 38 to take a **picture** . This causes the shutter of the second digital camera 38 to be opened, Shortly thereafter...

.to adopt a
specific pose via the speaker 100 and the internal screen 120 these **estimates** of the exact positioning of the user's limbs provide sufficient data to **determine** within tolerable boundaries for error the **posture** adopted by the user in the **images** provided that the user has correctly followed the instructions given to him. Data indicative of the orientation of the user's limbs in the **images** corresponding to the poses of Figures 5 and 7 is then stored in the data storage portion 138 of the memory 125 of the computer 120,

After the actual **posture** (s57) of the user in the **images** has been **determined** the computer 120 then identifies (s58) a number of facial features,

(e) Faci 1 Feature...

15/3,K/2 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00513346 **Image available**
SYSTEM AND METHOD FOR TRACKING AND ASSESSING MOVEMENT SKILLS IN MULTIDIMENSIONAL SPACE
DISPOSITIF ET TECHNIQUE DE SUIVI ET D'ESTIMATION DE LA DEXTERITE DE MOUVEMENTS DANS UN ESPACE PLURIDIMENSIONNEL
Patent Applicant/Assignee:
ARENA INC,
FRENCH Barry J,
FERGUSON Kevin R,
Inventor(s):
FRENCH Barry J,
FERGUSON Kevin R,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9944698 A2 19990910
Application: WO 99US4727 19990303 (PCT/WO US9904727)
Priority Application: US 9834059 19980303; US 98173274 19981015; US 99121935 19990226
Designated States: CA JP US AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 27304
Fulltext Availability:
Claims

Claim
... zone during performance of defined protocols.
f) The system provides a real-time numerical and **graphical** summary of the relationship or correlation between heart rate at each sample of time and...and/or power and
dynamic reactive cutting.
k) The system provides real time numerical and **graphical** feedback of the calculations of part j.
It should be noted that these motor-related...wearing a beacon or reflector 463 moves within a physical space 464, thereby creating a **three dimensional** contour pattern. The motion of the trainer 462 is tracked by a tracking system 466...since many maneuvers such as fakes and feints often mostly or totally involve changes in **orientation** as opposed to changes in **position** . For first person perspectives, taking **orientation** into account allows the view a player sees to be revised based on changes in orientation of a player.
Since orientation is a part of **posture** , measurement and display of lo orientation is useful in training correct sports **posture** . Taking orientation into account in the display would provide better feedback to the player regarding his or her orientation.
Measurement of player orientation may be used in **determining** certain measurement parameters, such as reaction time and first step quickness.
Measurement of orientation allows for **calculation** of rotational accelerations. Rapid, properly timed accelerations of the body center (the hips) are essential...

...medicine (rehabilitation of shoulder and elbow injuries, etc.). Specific parameters that may be measured or **calculated** taking into account upper extremity movements include: Dynamic Reaction Time (how quickly the lo hands...
?

18/3,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01024003
REFERENCE MARK, METHOD FOR RECOGNIZING REFERENCE MARKS AND METHOD FOR OBJECT MEASURING
MESSMARKE UND VERFAHREN ZUR ERKENNUNG VON MESSMARKEN SOWIE VERFAHREN ZUR OBJEKTVERMESSUNG
MARQUE DE REPERE, PROCEDE DE RECONNAISSANCE DE MARQUES DE REPERE ET PROCEDE DE MESURE D'OBJETS
PATENT ASSIGNEE:
DaimlerChrysler AG, (2635410), Epplestrasse 225, 70567 Stuttgart, (DE), (Proprietor designated states: all)
INVENTOR:
CAESAR, Torsten, Erich-Leuze-Strasse 7, D-78315 Radolfzell, (DE)
MICHAELIS, Martin, Furstenecker strasse 2, D-89077 Ulm, (DE)
PATENT (CC, No, Kind, Date): EP 993651 A1 000419 (Basic)
EP 993651 B1 030108
WO 99001841 990114
APPLICATION (CC, No, Date): EP 98939536 980626; WO 98EP3910 980626
PRIORITY (CC, No, Date): DE 19728513 970704
DESIGNATED STATES: AT; CH; DE; ES; FR; GB; IT; LI
INTERNATIONAL PATENT CLASS: **G06K-009/32**
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): German; German; German
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200302	3099
CLAIMS B	(German)	200302	2461
CLAIMS B	(French)	200302	3555
SPEC B	(German)	200302	5190
Total word count - document A			0
Total word count - document B			14305
Total word count - documents A + B			14305

INTERNATIONAL PATENT CLASS: **G06K-009/32**

...CLAIMS the evaluation of the measuring marks is carried out locally within the environment of the **pixel** coordinates of the centre of these potential measuring **marks** , and
- in that the **pixel** coordinates of the individual recognized measuring **marks** are referred to a **3D** coordinate system of the object to be measured, preferably referred with the aid of a...

18/3,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01021336
Hand pointing apparatus
Handzeigegerat
Appareil pour pointer avec la main
PATENT ASSIGNEE:
TAKENAKA CORPORATION, (2592560), 1-13, Hom-machi 4-chome Chuo-ku, Osaka-shi, Osaka, 541-0053, (JP), (applicant designated states: AT;BE;CH;CY;DE;DK;ES;FI;FR;GB;GR;IE;IT;LI;LU;MC;NL;PT;SE)
INVENTOR:

Harakawa, Kenichi, Technical Lab. Takenaka Corp., 5-1, Otsuka 1-chome, Inzai-shi, Chiba-ken, (JP)
LEGAL REPRESENTATIVE:
Klunker . Schmitt-Nilson . Hirsch (101001), Winzererstrasse 106, 80797 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 913790 A1 990506 (Basic)
APPLICATION (CC, No, Date): EP 98120405 981028;
PRIORITY (CC, No, Date): JP 97296788 971029
DESIGNATED STATES: DE; FR; GB
INTERNATIONAL PATENT CLASS: **G06K-011/08** ; G06F-003/00
ABSTRACT WORD COUNT: 208
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9918	1736
SPEC A	(English)	9918	17262
Total word count - document A			18998
Total word count - document B			0
Total word count - documents A + B			18998

INTERNATIONAL PATENT CLASS: **G06K-011/08** ...

...SPECIFICATION hand and directs the hand toward the display 12, and in the direction of the **marker** in the virtual 3-D space represented by a **three dimensional image** displayed on the display 12, and bends or stretches his or her arm in accordance...

...CLAIMS A hand pointing apparatus according to claim 3, further comprising:
display means which displays a **three dimensional image** ;
display control means which displays said **three dimensional image** on said display means; and
marker display means which displays a **marker** having an arbitrary shape which can be easily recognized by said person to be recognized,

wherein said **three dimensional image** is an **image** which represents a virtual 3-D space, and includes an image which is formed conforming...A hand pointing apparatus according to claim 3, further comprising:
display means which displays a **three dimensional image** ;
display control means which displays said **three dimensional image** on said display means; and
marker display means which displays a **marker** having an arbitrary shape which can be easily recognized by said person to be recognized,

wherein said **three dimensional image** is an **image** which represents a virtual 3-D space, and includes an image which is formed conforming...

18/3,K/3 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00955842
Method of locating a machine-readable marker within an image
Verfahren zum Orten einer maschinenlesbaren Markierung in einem Bild
Methode pour localiser un marquer lisible par machine a l'interieur d'une image
PATENT ASSIGNEE:

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD., (216885), 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-0050, (JP), (Applicant designated States: all)
INVENTOR:
Zhou, Jiangying, 42-11 Fox Run Drive, Plainsboro, New Jersey 08536, (US)
Lopresti, Daniel, 19 Elm Street, Hopewell, New Jersey 08525, (US)
LEGAL REPRESENTATIVE:
Bubb, Antony John Allen et al (28901), Wilson Gunn Gee, Chancery House, Chancery Lane, London WC2A 1QU, (GB)
PATENT (CC, No, Kind, Date): EP 866415 A2 980923 (Basic)
EP 866415 A3 020109
APPLICATION (CC, No, Date): EP 98301733 980309;
PRIORITY (CC, No, Date): US 822347 970320
DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: **G06K-007/10**
ABSTRACT WORD COUNT: 178
NOTE:
Figure number on first page: 1A

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9839	529
SPEC A	(English)	9839	4032
Total word count - document A			4561
Total word count - document B			0
Total word count - documents A + B			4561

INTERNATIONAL PATENT CLASS: **G06K-007/10**

...CLAIMS step of dilating said filled regions of said mask to dimensions greater than said predetermined **dimensions** of said **marker** .
3 . A method of locating a machine-readable **marker** in a digitized **image** having a first scale with a first resolution, said marker having predetermined dimensions, comprising the...

18/3,K/4 (Item 4 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00955654
Pointing device using the image of the hand
Das Bild einer Hand verwendende Hinweisvorrichtung
Dispositif de pointage utilisant l'image de la main
PATENT ASSIGNEE:
TAKENAKA CORPORATION, (308337), 1-13, 4 chome, Hom-machi Chuo-ku, Osaka-shi, Osaka-fu 541, (JP), (Applicant designated States: all)
INVENTOR:
Harakawa, Kenichi, c/o Tech.Lab. of Takenaka Corp., , 5-1, Otsuka 1-chome , Inzai-shi, Chiba-ken, (JP)
Unno, Kenichi, c/o Tech.Lab. of Takenaka Corp., , 5-1, Otsuka 1-chome, Inzai-shi, Chiba-ken, (JP)
Igawa, Norio, c/o Tech.Lab. of Takenaka Corp., , 5-1, Otsuka 1-chome, Inzai-shi, Chiba-ken, (JP)
LEGAL REPRESENTATIVE:
Klunker . Schmitt-Nilson . Hirsch (101001), Winzererstrasse 106, 80797 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 866419 A2 980923 (Basic)

EP 866419 A3 010523
APPLICATION (CC, No, Date): EP 98104954 980318;
PRIORITY (CC, No, Date): JP 9768602 970321; JP 97369628 971229
DESIGNATED STATES: DE; FR; GB
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: **G06K-011/08** ; G06F-003/00
TRANSLATED ABSTRACT WORD COUNT: 86
ABSTRACT WORD COUNT: 161
NOTE:
Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9839	2007
SPEC A	(English)	9839	20760
Total word count - document A			22767
Total word count - document B			0
Total word count - documents A + B			22767

INTERNATIONAL PATENT CLASS: **G06K-011/08** ...

...SPECIFICATION dimensional coordinates of the virtual points to the positions of the virtual points on the **images** based on the **three - dimensional** coordinates of the virtual points and the **marker** positions on the **images** picked up by the plurality of image pickup means, and the generating means for allowing...recognized (extracted). In the next step 110, the positions (XA)), YA))) of all the recognized **marks** 40A on the **image** A are calculated. In step 112, the **three - dimensional** coordinates (x, y, z) in the information input space of all the **marks** 40A in the **image** A are made to correspond to the positions (XA)), YA))) of all the marks 40A...recognized (extracted). In the next step 118, the positions (XB)), YB))) of all the recognized **marks** 40A on the **image** B are calculated. In step 120, the **three - dimensional** coordinates (x, y, z) in the information input space of all the **marks** 40A in the **image** B are made to correspond to the positions (XB)), YB))) of all the marks 40A ...

...CLAIMS dimensional coordinates of said virtual points to the positions of said virtual points on said **images** , based on the **three - dimensional** coordinates of said virtual points and the **marker** positions on said **images** picked up by said plurality of image pickup means, and for allowing said storing means...

...dimensional coordinates of said virtual points to the positions of said virtual points on said **images** , based on the **three - dimensional** coordinates of said virtual points and the **marker** positions on said **images** picked up by said plurality of image pickup means, and for allowing said storing means...

18/3,K/5 (Item 5 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00822515
Information recording medium for recording multimedia information as optical readable code data thereon and information recording reproducing system using the same
Informationsaufzeichnungsmedium zur Aufzeichnung von Multimediainformation

als optisch lesbare kodierte Daten und dieses benutzendes Informationsaufzeichnungswiedergabesystem

Milieu d'enregistrement d'information pour l'enregistrement d'information multimedia comme donnees codees lisibles par voie optique, et systeme d'enregistrement et de reproduction pour celui-ci

PATENT ASSIGNEE:
Olympus Optical Co., Ltd., (259726), 43-2, Hatagaya 2-Chome, Shibuya-Ku, Tokyo, (JP), (Applicant designated States: all)

INVENTOR:
Matsui, Shinzo, c/o Olympus Optical Co., Ltd., Intell. Prop. & Legal Dep., 2-3, Kuboyama-cho, Hachioji-shi, Tokyo, (JP)

LEGAL REPRESENTATIVE:
Winter, Brandl & Partner (100055), Patent- und Rechtsanwaltskanzlei Alois-Steinecker-Strasse 22, 85354 Freising, (DE)

PATENT (CC, No, Kind, Date): EP 764944 A2 970326 (Basic)
EP 764944 A3 991124

APPLICATION (CC, No, Date): EP 96113697 960827;

PRIORITY (CC, No, Date): JP 95241409 950920

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU; MC; NL; PT; SE

INTERNATIONAL PATENT CLASS: **G06K-019/06** ; G11B-020/10; G11B-020/18

ABSTRACT WORD COUNT: 249

NOTE:
Figure number on first page: 1A

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPAB97	1509
SPEC A	(English)	EPAB97	12481
Total word count - document A			13990
Total word count - document B			0
Total word count - documents A + B			13990

INTERNATIONAL PATENT CLASS: **G06K-019/06** ...

...SPECIFICATION the threshold value K2 setting unit 118 by the second binarization processing unit 110, a **marker image** signal including no dot data is obtained, as shown in FIG. **3D** .
The output signals from these first and second binarization processing units 108 and 110 are...

18/3,K/6 (Item 6 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

00757205

PROCEDURE FOR IDENTIFICATION OF OBJECTS BASED ON FORMING AND VERIFYING THEIR SURFACE ROUGHNESS AS WELL AS OBJECTS SUITABLE TO BE IDENTIFIED

IDENTIFIZIERUNGSVERFAHREN VON GEGENSTANDEN, WOBEI IHRE OBERFLACHE RAUH GEMACHT WIRD UND DIESE RAUHHEIT UBERPRUFT WIRD UND DAFUR GEEIGNETE GEGENSTANDE

PROCEDE D'IDENTIFICATION D'OBJETS CONSISTANT A RENDRE LEUR SURFACE RUGUEUSE ET A CONTROLER LEUR RUGOSITE DE SURFACE, ET OBJETS APTES A ETRE IDENTIFIES

PATENT ASSIGNEE:
Pikler, Lajos, (2100800), Budapesti ut 51, 2040 Budaors, (HU), (applicant designated states: AT;CH;DE;ES;FR;GB;IT;LI;NL;SE)

INVENTOR:

PIKLER, Lajos, Budapesti Ut 51, H-2040 Budaors, (HU)
JESZENSZKY, Gyula, Tarasz Ut 51, H-2040 Budaors, (HU)
DOMBI, Janos, Tarasz Ut 51, H-2040 Budaors, (HU)
LEGAL REPRESENTATIVE:
Beetz & Partner Patentanwalte (100712), Steinsdorfstrasse 10, 80538 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 772843 A1 970514 (Basic)
EP 772843 B1 990519
WO 9603714 960208
APPLICATION (CC, No, Date): EP 95925082 950703; WO 95HU32 950703
PRIORITY (CC, No, Date): HU 7994021 940725
DESIGNATED STATES: AT; CH; DE; ES; FR; GB; IT; LI; NL; SE
INTERNATIONAL PATENT CLASS: **G06K-019/18** ; B42D-015/10; B23H-009/06
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9920	579
CLAIMS B	(German)	9920	489
CLAIMS B	(French)	9920	570
SPEC B	(English)	9920	3115
Total word count - document A			0
Total word count - document B			4753
Total word count - documents A + B			4753

INTERNATIONAL PATENT CLASS: **G06K-019/18** ...

...SPECIFICATION storage of a computer and/or on a portable storage means and, when identifying the **picture** and/or the code of the **marking** placed on the object will be compared to those that stored, based on that the **3 - dimension marking** containing the elementary formations of roughness in a chaotic arrangement will be produced by means...

18/3,K/7 (Item 7 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00745030
DIGITISED SENSING PROCESS AND ARRANGEMENT FOR THE THREE-DIMENSIONAL SHAPE IN SPACE OF BODIES OR BODY PARTS
VERFAHREN UND ANORDNUNG ZUR DREIDIMENSIONALEN DIGITALISIERTEN ERFASSUNG DER RAUMFORM VON KORPERN ODER KORPERTEILEN
PROCEDE ET AGENCEMENT DE SAISIE NUMERISEE DE LA FORME TRIDIMENSIONNELLE DE CORPS OU DE PARTIES DE CORPS DANS L'ESPACE
PATENT ASSIGNEE:
Massen, Robert, Prof. Dr., (665821), Am Rebberg 29, D-78337 Ohningen, (DE), (applicant designated states: CH;DE;IT;LI)
INVENTOR:
Massen, Robert, Prof. Dr., Am Rebberg 29, D-78337 Ohningen, (DE)
LEGAL REPRESENTATIVE:
Leiser, Gottfried, Dipl.-Ing. (7511), Prinz & Partner GbR Manzingerweg 7, 81241 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 760622 A1 970312 (Basic)
EP 760622 B1 981111
WO 9531934 951130
APPLICATION (CC, No, Date): EP 95922469 950522; WO 95EP1934 950522
PRIORITY (CC, No, Date): DE 4417872 940522
DESIGNATED STATES: CH; DE; IT; LI

INTERNATIONAL PATENT CLASS: A61B-005/107; A43D-001/02; G01C-011/06;
G01B-011/16 ; A61F-002/50; G05B-019/42
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): German; German; German
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9846	780
CLAIMS B	(German)	9846	668
CLAIMS B	(French)	9846	876
SPEC B	(German)	9846	2215
Total word count - document A			0
Total word count - document B			4539
Total word count - documents A + B			4539

...INTERNATIONAL PATENT CLASS: **G01B-011/16**

...CLAIMS markings (18) on the envelope (11) provided with the high-contrast pattern (12), and these **markings** (18) are recognized in the recorded **images** by **image** processing methods and employed as assistance in assigning **three - dimensional** surface coordinates to the marked positions of the body or body part (10).
11. The...

18/3,K/8 (Item 8 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00733707
THREE-DIMENSIONAL PHENOTYPIC MEASURING SYSTEM FOR ANIMALS
DREIDIMENSIONALES PHANOTYPISCHES MESSSYSTEM FUR TIERE
SYSTEME DE MESURE PHENOTYPIQUE TRIDIMENSIONNELLE POUR ANIMAUX
PATENT ASSIGNEE:
PHENO IMAGING, INC., (2051690), 4075 W. 120th Avenue, Broomfield, CO 80020, (US), (Proprietor designated states: all)
INVENTOR:
ELLIS, James, S., 1790 Elmwood Drive, Broomfield, CO 80020, (US)
LEGAL REPRESENTATIVE:
Enskat, Michael Antony Frank (50381), Saunders & Dolleymore, 9, Rickmansworth Road, Watford, Hertfordshire WD18 0JU, (GB)
PATENT (CC, No, Kind, Date): EP 755609 A1 970129 (Basic)
EP 755609 A1 990107
EP 755609 B1 011010
WO 9528807 951026
APPLICATION (CC, No, Date): EP 95915619 950410; WO 95US4370 950410
PRIORITY (CC, No, Date): US 227714 940414
DESIGNATED STATES: BE; DE; DK; ES; FR; GB; IT; NL; SE
INTERNATIONAL PATENT CLASS: H04N-007/18; **G01B-011/24** ; **G01B-011/02** ; A01K-011/00; A01K-029/00
NOTE:
No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200141	960
CLAIMS B	(German)	200141	899
CLAIMS B	(French)	200141	1163
SPEC B	(English)	200141	5920
Total word count - document A			0

Total word count - document B 8942
Total word count - documents A + B 8942

...INTERNATIONAL PATENT CLASS: **G01B-011/24** ...

... **G01B-011/02**

...CLAIMS claim 1 wherein the computer (136) further comprises a storage device (412) for storing the **three - dimensional** reflection location data (111) along with the **three - dimensional** physical characteristics wherein **images** of **markings** on the animal are stored for later identification.
5. The system (132, 136) of claim...

18/3,K/9 (Item 9 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00414600
Image distinguishing device.
Bilderunterscheidungsvorrichtung.
Dispositif pour discerner une image.
PATENT ASSIGNEE:
MITA INDUSTRIAL CO., LTD., (283522), 2-28, 1-chome, Tamatsukuri Chuo-ku, Osaka 540, (JP), (applicant designated states: DE;FR;GB;IT;NL)
INVENTOR:
Fujimoto, Masaya, 106-go Syanburetto-rokko,, 3-2-10 Hiehara-cho Nada ku, Kobe-Shi, Hyogo, (JP)
Yamamoto, Haruo, 640.7 Oaza Shichiyama, Kumatori-cho, Sennan-gun, Osaka, (JP)
Matsushita, Tsukasa, 3-27-12 Hukono, Daito-shi, Osaka, (JP)
Kumamoto, Hidechika, 3-2-4-509 Kamotanidai, Sakai-shi, Osaka, (JP)
LEGAL REPRESENTATIVE:
Schwan, Gerhard, Dipl.-Ing. (10931), Elfenstrasse 32, D-8000 Munchen 83, (DE)
PATENT (CC, No, Kind, Date): EP 405400 A2 910102 (Basic)
EP 405400 A3 920902
APPLICATION (CC, No, Date): EP 90112039 900625;
PRIORITY (CC, No, Date): JP 89170497 890630; JP 89170498 890630; JP 89170502 890630
DESIGNATED STATES: DE; FR; GB; IT; NL
INTERNATIONAL PATENT CLASS: H04N-001/387; **G06K-009/20**
ABSTRACT WORD COUNT: 194

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	526
SPEC A	(English)	EPABF1	10478
Total word count - document A			11004
Total word count - document B			0
Total word count - documents A + B			11004

...INTERNATIONAL PATENT CLASS: **G06K-009/20**

...CLAIMS less than the appointed distance, and further to detect the area surrounded by the two- **dimensional marker** line.
3 . An **image** distinguishing device for distinguishing the area surrounded by the **marker** line of the half tone area on a document

image , comprising:-
binarization processing means to binarize the reading data of the document image with two...

18/3,K/10 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00452740 **Image available**
METHOD AND APPARATUS FOR GENERATING A DISPLAY LIST
PROCEDE ET APPAREIL PERMETTANT DE GENERER UNE LISTE DE VISUALISATION
Patent Applicant/Assignee:
HARLEQUIN INCORPORATED,
HARLEQUIN GROUP PLC,
Inventor(s):
BARADA Peter W,
CAVE Andrew P,
EARL David J,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9843204 A1 19981001
Application: WO 98US5498 19980320 (PCT/WO US9805498)
Priority Application: US 97821849 19970321
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 12027

Main International Patent Class: **G06K-015/02**
Fulltext Availability:
Detailed Description

Detailed Description
... are three objects, a circular polygon overlapped by a rectangle which is overlapped by start- **shaped** polygon, these **three** objects are respectively A, B, C. Object A **marks** **pixels** contained within bands 1, 2, 3 (indexed in the page structure as bands 0, 1...

18/3,K/11 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00445907 **Image available**
METHOD AND SYSTEM FOR REGISTERING THE POSITION OF A SURGICAL SYSTEM WITH A PREOPERATIVE BONE IMAGE
PROCEDE ET SYSTEME D'ALIGNEMENT DE LA POSITION D'UN SYSTEME CHIRURGICAL AVEC UNE IMAGE OSSEUSE PREOPERATOIRE
Patent Applicant/Assignee:
INTEGRATED SURGICAL SYSTEMS INC,
Inventor(s):
MITTELSTADT Brent D,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9836371 A1 19980820
Application: WO 98US2817 19980212 (PCT/WO US9802817)

Priority Application: US 9738178 19970213
Designated States: AU CA JP AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 9811

Main International Patent Class: **G06K-009/00**
Fulltext Availability:
Detailed Description

Detailed Description
... and directional vectors can be effected, by conventional image processing thresholding techniques applied to the **image** data set to produce a binary **image** set which identifies the **three - dimensional** coordinates of all **pixel** elements for the fiducial **marker** in the **three dimensional** space. Based on the identified **pixels** , the center of mass of the fiducial **image** can be calculated. Based on the center of mass, a precise positional coordinate (usually the...

18/3,K/12 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00391519 **Image available**
VARIABLE FORMATTING OF DIGITAL DATA INTO A PATTERN
FORMATAGE VARIABLE DE DONNEES NUMERIQUES SELON UNE CONFIGURATION
Patent Applicant/Assignee:
COBBLESTONE SOFTWARE INC,
Inventor(s):
ANTOGNINI Thomas,
ANTOGNINI Walter,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9732262 A1 19970904
Application: WO 97US3330 19970228 (PCT/WO US9703330)
Priority Application: US 96609549 19960301
Designated States: AU CA CN IL JP AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 40377

...International Patent Class: **G06K-05:00** ...

... **G06K-07:10** ...
... **G06K-07:00** ...

... **G06K-07:12**
Fulltext Availability:
Detailed Description

Detailed Description
... two basic elements are differentiated in the present embodiment by relative size and placement. Each **marker** is 3 **pixels** by 3 **pixels** , these **dimensions** having been determined by setting the parameters **Marker** Height and **Marker** Width each equal to 3. The **markers** are arranged in columns, with each column being one marker wide and as high as...center of the last column of possible spots. The substrate has markers located in the **image** of FIG. 19 in columns 1901 consisting of 4 **markers** at the right and left perimeters of the **image** . These **markers**

have **dimensions** 3 printer **pixels** wide by 3 printer **pixels** high. The distance from **markers** to the closest possible spots 1902 equals 5. Each spot such as spot 1903, is...

18/3,K/13 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00348534 **Image available**
IMMERSIVE VIDEO
VIDEO D'IMMERSION
Patent Applicant/Assignee:
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,
JAIN Ramesh,
WAKIMOTO Koji,
MOEZZI Saied,
KATKERE Arun,
Inventor(s):
JAIN Ramesh,
WAKIMOTO Koji,
MOEZZI Saied,
KATKERE Arun,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9631047 A2 19961003
Application: WO 96US4400 19960329 (PCT/WO US9604400)
Priority Application: US 95414437 19950331; US 95554848 19951107
Designated States: AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG US UZ VN KE LS MW SD SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 29541

Main International Patent Class: **G06K-009/20**
Fulltext Availability:
Detailed Description

Detailed Description
... The player descriptions include each player's name and the coordinates of each player's **image** . The field mark descriptions include the positions (in the **three - dimensional** world), and the **image** coordinates, of all the field **marks** .

In the rudimentary embodiment of the MPI video system, all feature points are specified interactively...

18/3,K/14 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00324636 **Image available**
SYSTEM AND METHOD OF REGISTRATION OF THREE-DIMENSIONAL DATA SETS
SYSTEME ET PROCEDE D'ENREGISTREMENT D'ENSEMBLES DE DONNEES D'IMAGES TRIDIMENSIONNELLES
Patent Applicant/Assignee:
MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

Inventor(s):
GRIMSON W Eric L,
WHITE Steven J,
ETTINGER Gil J,
WELLS William M III,
LOZANO-Perez Thomas,
KIKINIS Ron,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9607144 A1 19960307
Application: WO 95US11130 19950901 (PCT/WO US9511130)
Priority Application: US 94299378 19940901; US 95521018 19950830
Designated States: CA JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 9400
International Patent Class: **G01B-11:24**
Fulltext Availability:
Claims

Claim
... portion
7 of the patient"s body so as to obtain three-dimensional
8 surface **image** data;
storing said **three - dimensional** surface **image** data with
10 reference to a second coordinate frame;
tracking visual **markers** associated with a probe in the
12 vicinity of said predetermined portion of the patient...

18/3,K/15 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00275471 **Image available**
SYSTEM FOR LOCATING RELATIVE POSITIONS OF OBJECTS
SYSTEME DE DETERMINATION DE LA POSITION RELATIVE D'OBJETS
Patent Applicant/Assignee:
PIXSYS INC,
SCHULZ Waldean A,
Inventor(s):
SCHULZ Waldean A,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9423647 A1 19941027
Application: WO 94US4298 19940422 (PCT/WO US9404298)
Priority Application: US 9352042 19930422; US 9352045 19930422
Designated States: AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB GE HU JP KG
KP KR KZ LK LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI SK TJ TT UA
US US UZ VN AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE BF BJ CF CG
CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 20376

International Patent Class: **G01B-11:00**
Fulltext Availability:
Claims

Claim
... dimensional local coordinate system which is
fixed in relation to said second object;
previously taken **three - dimensional** **image** data which
geometrically describe said second object including said

fiducial **markers** ;
at least two spaced apart electromagnetic radiation
emitter means disposed on said first object;
first...

...second object in said fixed coordinate system by
integrating the determined location of said fiducial
markers on said second object;
means to orient said previously taken **three**
dimensional **image** data of said second ...to said second object and
at
known coordinates in said local coordinate system;
previously taken **three - dimensional** **image** data which
geometrically describe said second object including said
fiducial **markers** in said fixed coordinate system;
at least two spaced apart radiation emitter means
disposed on...

...object in said f ixed coordinate system by
integrating the determined location of said fiducial
markers on said second object into said fixed coordinate
system;
means to orient said previously taken **three**
dimensional **image** data of said second object such as to
match the present time position and orientation...
?

21/3,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01437298
System for locating relative positions of objects
Anordnung zur Bestimmung der gegenseitigen Lage von Korpern
Systeme de determination de la position relative d'objets
PATENT ASSIGNEE:
Image Guided Technologies, Inc., (1866370), 5710-B Flatiron Parkway, Boulder, CO 80301, (US), (Applicant designated States: all)
INVENTOR:
Schulz, Waldean A., 440 Japonica Way, Boulder, CO 80301, (US)
LEGAL REPRESENTATIVE:
Rothinger, Rainer (90711), c/o Wuesthoff & Wuesthoff Patent- und Rechtsanwalte Schweigerstrasse 2, 81541 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 1219259 A1 020703 (Basic)
APPLICATION (CC, No, Date): EP 2002004032 940422;
PRIORITY (CC, No, Date): US 52042 930422; US 52045 930422
DESIGNATED STATES: DE; FR; GB; IT; SE
RELATED PARENT NUMBER(S) - PN (AN):
EP 700269 (EP 94915394)
INTERNATIONAL PATENT CLASS: A61B-019/00
ABSTRACT WORD COUNT: 173
NOTE:
Figure number on first page: 1A

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200227	1820
SPEC A	(English)	200227	13898
Total word count - document A			15718
Total word count - document B			0
Total word count - documents A + B			15718

...CLAIMS 75) on said second object in said fixed coordinate system (80);
means to determine the **position** and **orientation** of said second object (11) in said fixed coordinate system (80) by integrating the determined location of said fiducial **markers** (71, 73, 75) on said second object (11);
means to orient said previously taken **three dimensional image** data of said second object (11) such as to match the present time **position** and **orientation** of said second object (11) with the previously taken said image data;
means to integrate...12) for a finite period of time.
24. A method for determining the present time **location** and **orientation** of a movable first object (12) with respect to a second object (11) and for graphically indicating the corresponding **position** and **orientation** of said first object (12) on a previously taken **image** of said second object (11), which comprises:
providing a present time **three - dimensional** fixed coordinate system (80);
providing at least three non-collinear fiducial **markers** (71, 73, 75) in fixed spatial relationship to said second object (11);
providing previously taken **three - dimensional image** data which geometrically describe said second object (11) including said fiducial **markers** (71, 73, 75);
at the present time, at sufficiently frequent intervals to follow present time...

...73, 75) on said second object (11) in said fixed coordinate system (80);

determining the **position** and **orientation** of said second object (11) in said fixed coordinate system (80) by integrating the determined locations of said fiducial **markers** (71, 73, 75) on said second object (11);
orienting said previously taken **three - dimensional image** data of said second object (11) such as to match the present time **position** and **orientation** of said second object (11) with the previously taken image data;
integrating the present time...

21/3,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01012129
IMAGE GENERATING DEVICE AND IMAGE GENERATING METHOD
BILDERZEUGUNGSSYSTEM UND -VERFAHREN
IMAGEUR ET PRINCIPE CORRESPONDANT
PATENT ASSIGNEE:
Sony Corporation, (214028), 7-35, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo 141-0001, (JP), (applicant designated states: DE;ES;FR;GB)
INVENTOR:
OHKI, Mitsuharu, Sony Corporation 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo 141-0001, (JP)
NAGANO, Hidetoshi, Sony Corporation 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo 141-0001, (JP)
TOTSUKA, Takashi, Sony Corporation 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo 141-0001, (JP)
LEGAL REPRESENTATIVE:
Melzer, Wolfgang, Dipl.-Ing. et al (8279), Patentanwalte Mitscherlich & Partner, Sonnenstrasse 33 a, 80331 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 921678 A1 990609 (Basic)
WO 9853606 981126
APPLICATION (CC, No, Date): EP 98921760 980522; WO 98JP2246 980522
PRIORITY (CC, No, Date): JP 13403797 970523
DESIGNATED STATES: DE; ES; FR; GB
INTERNATIONAL PATENT CLASS: H04N-005/262;
ABSTRACT WORD COUNT: 208

LANGUAGE (Publication,Procedural,Application): English; English; Japanese
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9923	808
SPEC A	(English)	9923	9049
Total word count - document A			9857
Total word count - document B			0
Total word count - documents A + B			9857

...SPECIFICATION M1 to M9 on the basis of the TV camera 104 can be measured.
The **picture** generator 103 is also provided with a **markers** ' positional information storage 105 for storing the **three - dimensional** positional information PDW of **markers** M1 to M9 on the basis of the world coordinates and a camera parameter calculator 106 for acquiring the three-dimensional **position** and the **orientation** of the TV camera 104 on the basis of the world coordinates based upon the...

21/3,K/3 (Item 3 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

00567233
System and method for augmentation of endoscopic surgery
System und Verfahren zur Verbesserung von endoskopischer Chirurgie
Systeme et methode d'amelioration en chirurgie endoscopique
PATENT ASSIGNEE:
International Business Machines Corporation, (200120), Old Orchard Road, Armonk, N.Y. 10504, (US), (applicant designated states: AT;BE;CH;DE;ES;FR;GB;IT;LI;NL;SE)
INVENTOR:
Funda, Janez, 25 West Clinton Street, Valhalla, New York 10595, (US)
LaRose, David Arthur, 161 Maple Street, Croton on Hudson, New York 10520, (US)
Taylor, Russell Highsmith, 21 Adams Road, Ossining, New York 10562, (US)
LEGAL REPRESENTATIVE:
Teufel, Fritz, Dipl.-Phys. (11855), IBM Deutschland Informationssysteme GmbH, Patentwesen und Urheberrecht, 70548 Stuttgart, (DE)
PATENT (CC, No, Kind, Date): EP 571827 A1 931201 (Basic)
EP 571827 B1 981125
APPLICATION (CC, No, Date): EP 93107816 930513;
PRIORITY (CC, No, Date): US 889215 920527
DESIGNATED STATES: AT; BE; CH; DE; ES; FR; GB; IT; LI; NL; SE
INTERNATIONAL PATENT CLASS: A61B-001/00; A61B-019/00;
ABSTRACT WORD COUNT: 172

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9848	1301
CLAIMS B	(German)	9848	1242
CLAIMS B	(French)	9848	1381
SPEC B	(English)	9848	9365
Total word count - document A			0
Total word count - document B			13289
Total word count - documents A + B			13289

...SPECIFICATION a second image 601b is obtained. Note that the second vantage point has a different **position** and **orientation** than the first vantage point. The feature center W is located in the second image...

...be asked to manually designate the image location of the feature center in the two **images** using any of the means of designating **image** locations described previously.
Once a **3D** feature has been designated and its **3D** location successfully computed, computer 243 can confirm its location by **marking** the location with a **3D** stereoscopic **graphical** object superimposed on the stereoscopic **image** of the area of interest. In one embodiment of this method of confirming 3D feature...

21/3,K/4 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00498830 **Image available**

A SYSTEM FOR DETERMINING THE SPATIAL POSITION AND ORIENTATION OF A BODY
SYSTEME PERMETTANT DE DETERMINER LA POSITION SPATIALE ET L'ORIENTATION D'UN CORPS

Patent Applicant/Assignee:
NORTHERN DIGITAL INCORPORATED,
Inventor(s):
LEIS Stephen Eldon,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9930182 A1 19990617
Application: WO 98CA1118 19981202 (PCT/WO CA9801118)
Priority Application: US 97985462 19971205
Designated States: CA CN JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 8539

Fulltext Availability:
Detailed Description

Detailed Description
... or object.

As is known in the art, systems are available for determining the spatial **position** and angular **orientation** of a body (or object). One such system includes passive retro-reflectors as point markers...

...includes active radiating emitters as the affixed point markers. Both techniques operate by projecting the **image** of a high contrasting **marker** onto spaced sensors and using mathematical processing to determine the **three dimensional** coordinates of each one of the point **markers** .

These **three dimensional** coordinates (i.e., **3D**) are then used as discrete points, or may be considered as a set if their geometric arrangement is known, resulting in the determination of the **position** and angular **orientation** of the body (i.e., six degrees of freedom: x,y and z positions and...

Good!

21/3,K/5 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00469118 **Image available**
METHOD AND APPARATUS FOR VOLUMETRIC IMAGE NAVIGATION
PROCEDE ET DISPOSITIF PERMETTANT DE GENERER DES IMAGES TRIDIMENSIONNELLES A DES FINS DE "NAVIGATION"
Patent Applicant/Assignee:
THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY,
Inventor(s):
SHAHIDI Ramin,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9900052 A1 19990107
Application: WO 98US13391 19980626 (PCT/WO US9813391)
Priority Application: US 97884289 19970627
Designated States: JP AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
Publication Language: English
Fulltext Word Count: 8167

Fulltext Availability:
Detailed Description

Detailed Description
... be displayed.
This view vector is obtained by querying the OTS to ascertain the current **location** and **orientation** of the surgical instrument (109). With this information, the three-dimensional scan data is then manipulated (306) to position and orient the resulting **three - dimensional** perspective view and to define cutting planes and reference **markers** in the displayed **image** indicating and clarifying this view. The manipulated **three - dimensional** perspective **image** is then displayed (307) on the video display (102).

In addition, other two-dimensional images...
?

22/3,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS

01012171
IMAGE PROCESSING METHOD AND DEVICE, IMAGE PROCESSING PANEL, AND RECORDING MEDIUM
BILDVERARBEITUNGSVERFAHREN, -VORRICHTUNG UND -PANEL SOWIE AUFZEICHNUNGSMEDIUM
PROCEDE ET DISPOSITIF DE TRAITEMENT D'IMAGES, PANNEAU DE TRAITEMENT D'IMAGES ET SUPPORT D'ENREGISTREMENT
PATENT ASSIGNEE:
Sony Corporation, (214028), 7-35, Kitashinagawa 6-chome, Shinagawa-ku, Tokyo 141-0001, (JP), (applicant designated states: DE;ES;FR;GB)
INVENTOR:
OHKI, Mitsuharu, Sony Corporation 7-35, Kitashinagawa 6-chome, Shinagawa-ku Tokyo 141-0001, (JP)
LEGAL REPRESENTATIVE:
Melzer, Wolfgang, Dipl.-Ing. et al (8278), Patentanwalte Mitscherlich & Partner, Sonnenstrasse 33, 80331 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 923235 A1 990616 (Basic)
WO 9854894 981203
APPLICATION (CC, No, Date): EP 98921816 980526; WO 98JP2307 980526
PRIORITY (CC, No, Date): JP 13561597 970526
DESIGNATED STATES: DE; ES; FR; GB
INTERNATIONAL PATENT CLASS: H04N-005/262; H04N-009/75; G06T-001/00;
ABSTRACT WORD COUNT: 99

LANGUAGE (Publication,Procedural,Application): English; English; Japanese
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	9924	496
SPEC A	(English)	9924	12576
Total word count - document A			13072
Total word count - document B			0
Total word count - documents A + B			13072

...SPECIFICATION camera 1 at time T1 being as reference.
Then, the portion of blue of original **picture** shown in FIG. 15A is removed. Thus, the portion except for **marker** of background of blue is removed from projected **image** 17. Since **three - dimensional** positions of respective bodies within the original picture are measured at the coordinate system 14...

...is removed. The reason thereof is that this portion is not included in three-dimensional **area** V. Accordingly, key **extracted** picture after unnecessary portion has been removed in this way is as shown in FIG...
?